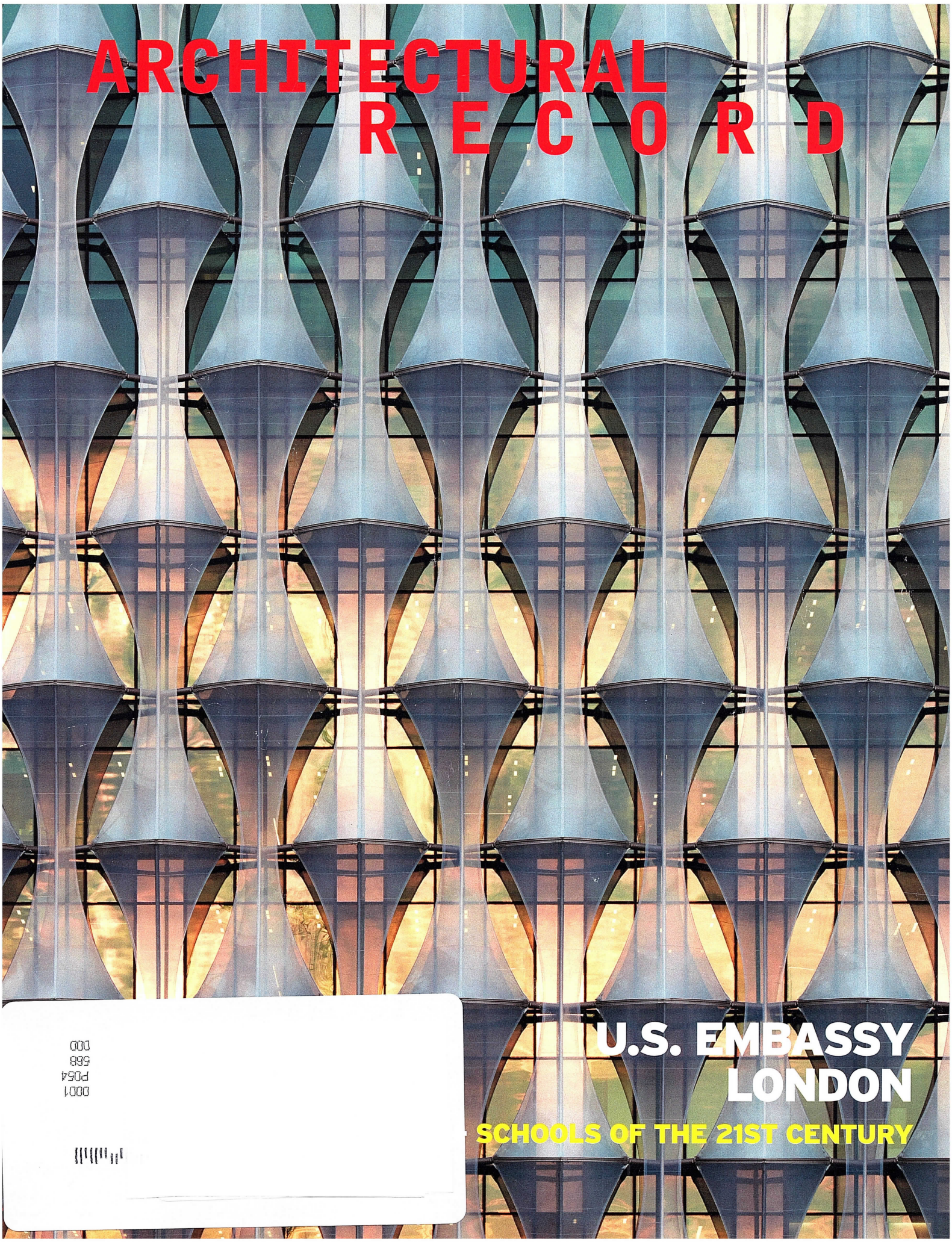

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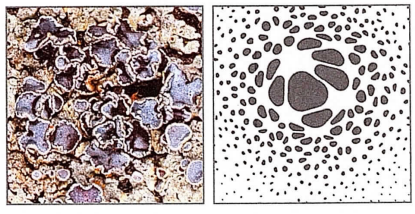
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DEPUTY EDITOR	Suzanne Stephens, *stephenss@bnpmedia.com*
FEATURES EDITOR	Josephine Minutillo, *minutilloj@bnpmedia.com*
SENIOR EDITORS	Joann Gonchar, AIA, LEED AP, *goncharj@bnpmedia.com* Linda C. Lentz, *lentzl@bnpmedia.com*
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SENIOR DIGITAL/NEWS EDITOR	Miriam Sitz, *sitzm@bnpmedia.com*
ASSOCIATE EDITOR	Alex Klimoski, *klimoskia@bnpmedia.com*
ASSISTANT WEB EDITOR	Justin Chan, chanj@*bnpmedia.com*
EDITORIAL ASSISTANT	Erin Hudson, hudsone@*bnpmedia.com*
COPY EDITOR	Anna Shapiro
ART DIRECTOR	Michael T. Powell, *powellm@bnpmedia.com*
ASSISTANT ART DIRECTOR	Kaylee Webster, *websterk@bnpmedia.com*
CONTRIBUTING ILLUSTRATOR, PRESENTATION DRAWINGS	Peter Coe
CONTRIBUTING EDITORS	Sarah Amelar, Fred A. Bernstein, Robert Campbell, FAIA, C.J. Hughes, Blair Kamin, Jayne Merkel, Clifford A. Pearson David Sokol, Michael Sorkin, Sarah Williams Goldhagen
SPECIAL INTERNATIONAL CORRESPONDENT	Naomi R. Pollock, AIA
INTERNATIONAL CORRESPONDENTS	David Cohn, Tracy Metz, Aric Chen, Chris Foges
CONTRIBUTING PHOTOGRAPHERS	Iwan Baan, Roland Halbe

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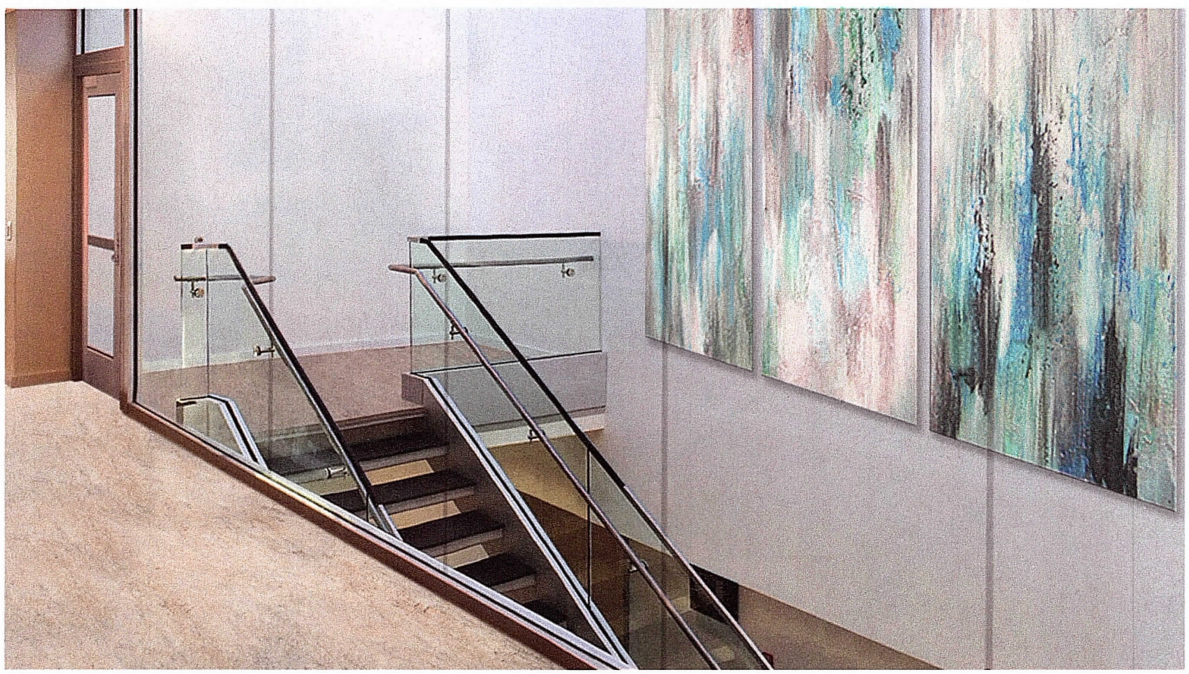
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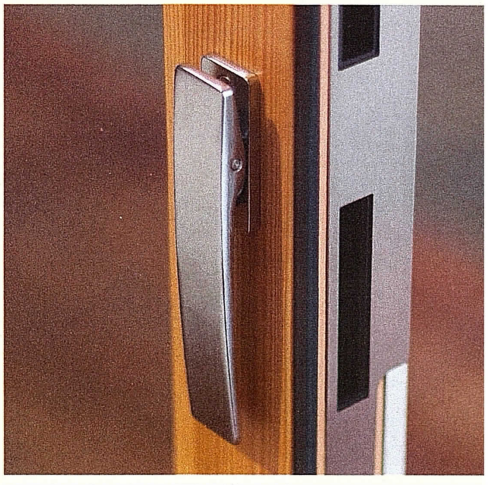
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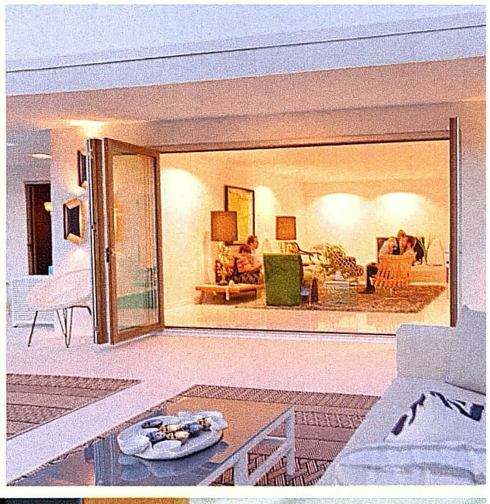
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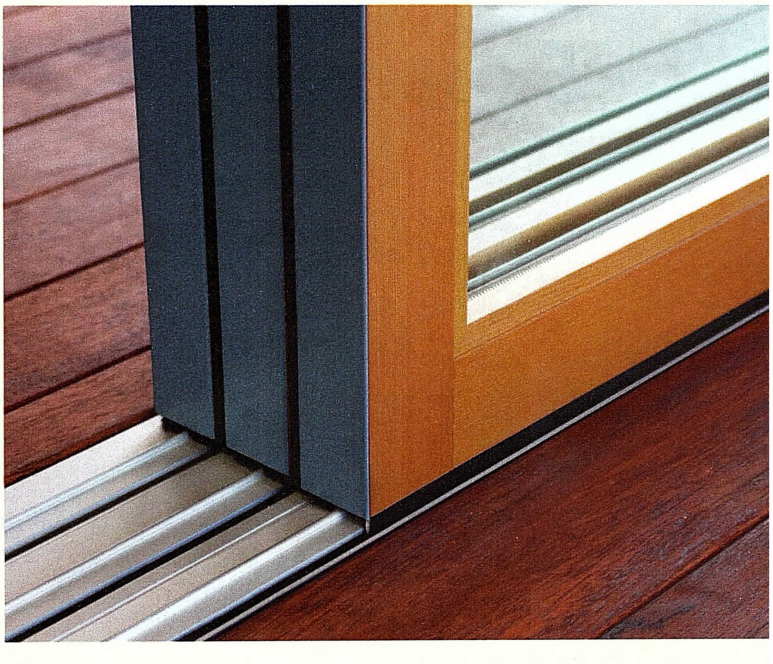
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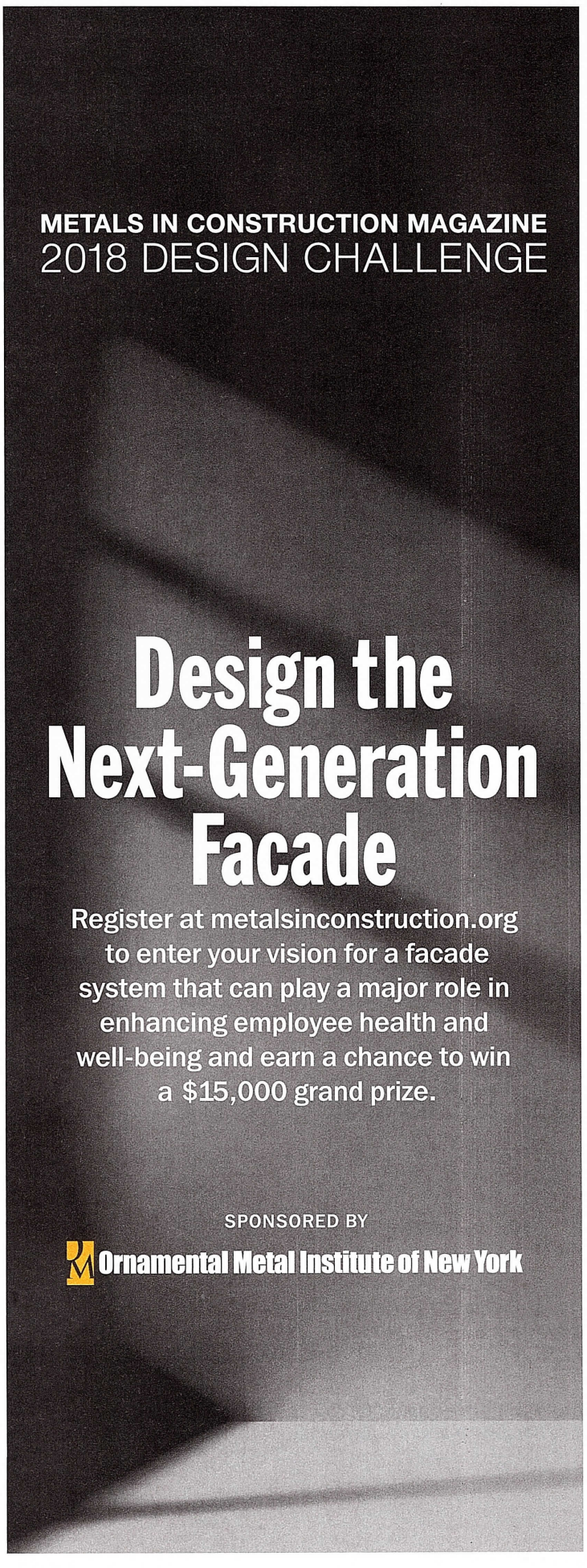
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PUBLISHER
Alex Bachrach
bachracha@bnpmedia.com

ADVERTISING SALES
NEW ENGLAND AND PA: Joseph Sosnowski
(610) 278-7829, Fax: (610) 278-0936, *sosnowskij@bnpmedia.com*
SOUTHEAST, MID-ATLANTIC: Wesley Loon
(859) 414-3795, Fax: (248) 502-9104, *loonw@bnpmedia.com*
MIDWEST (IA, IL, MN, MO, WI): Bruce Smith
(224) 216-7836, Fax: (248) 786-1390, *Smithb@bnpmedia.com*
MIDWEST (IN, MI, OH), TX, OK, EASTERN CANADA: Lisa Zurick
(513) 345-8210, Fax: (513) 345-8250, *zurickl@bnpmedia.com*
WEST, WESTERN CANADA: Bill Madden
(503) 260-9679, Fax: (503) 557-9002, *bill@maddenandassociates.net*
FL, KS, NE, ND, NY, SD, INTERNATIONAL: Risa Serin
(646) 849-7130, Fax: (248) 786-1393, *serinr@bnpmedia.com*

WORKFORCE/RECRUITMENT: Diane Soister
(646) 849-7137, Fax: (248) 502-2046, *soisterd@bnpmedia.com*

PRODUCTION MANAGER: Kristen Carpenter
(248) 786-1222, Fax: (248) 502-2051, *carpenterk@bnpmedia.com*

CONTINUING EDUCATION
CONTINUING EDUCATION GROUP MANAGER
Brittnie Wilson
wilsonb@bnpmedia.com

CONTINUING EDUCATION PROJECT COORDINATOR
Stephanie Costigan
costigans@bnpmedia.com

CUSTOM CONTENT EDITOR
Samantha Meux
meuxs@bnpmedia.com

CORPORATE DIRECTORS
PUBLISHING
John R. Schrei
CORPORATE STRATEGY DIRECTOR
Rita M. Foumia
INFORMATION TECHNOLOGY
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SENIOR ACCOUNT MANAGER
Kevin Collopy
(402) 836-6265,
Toll Free: 800/223-2194, ext. 684
kevin.collopy@infogroup.com

SENIOR ACCOUNT MANAGER
Michael Costantino
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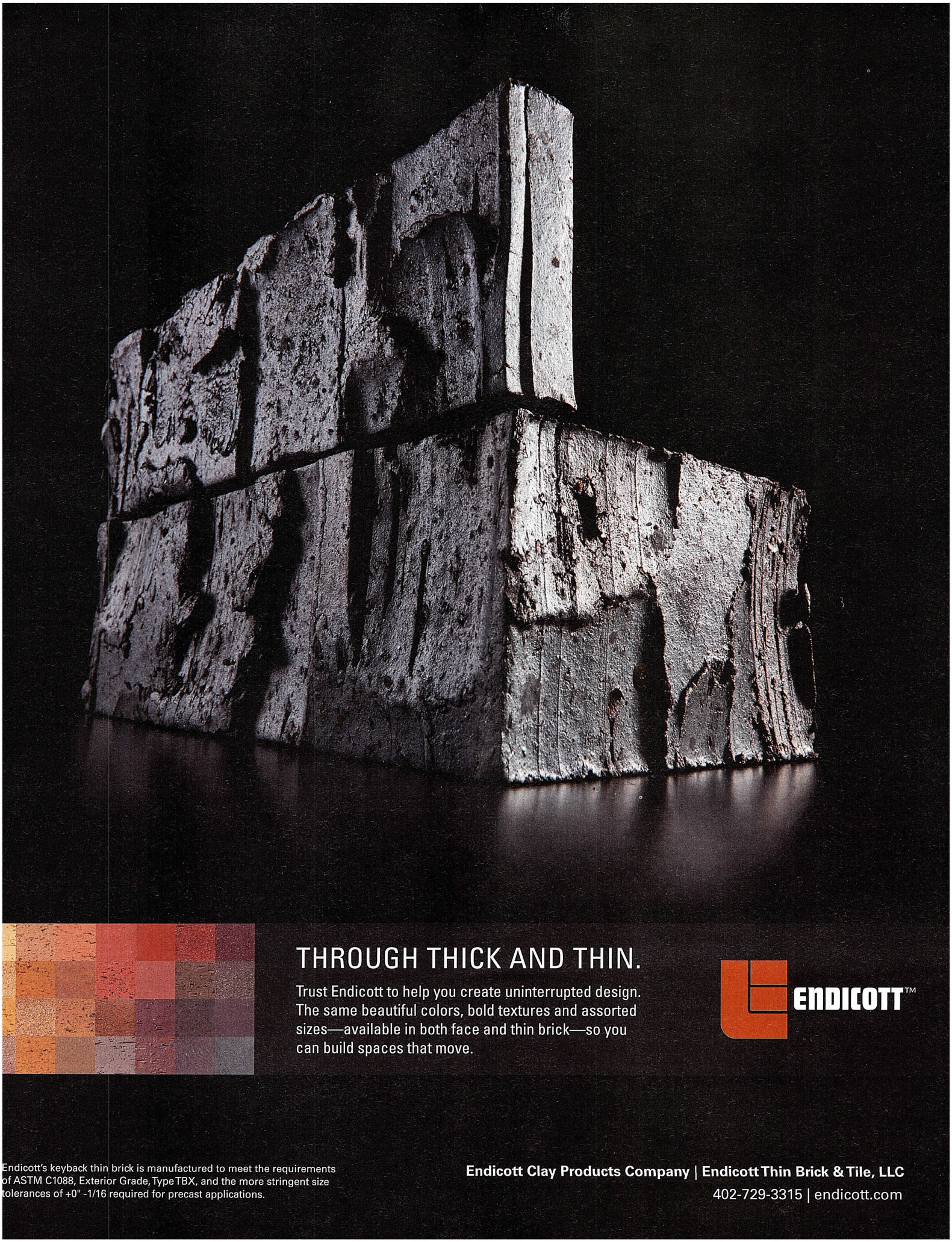
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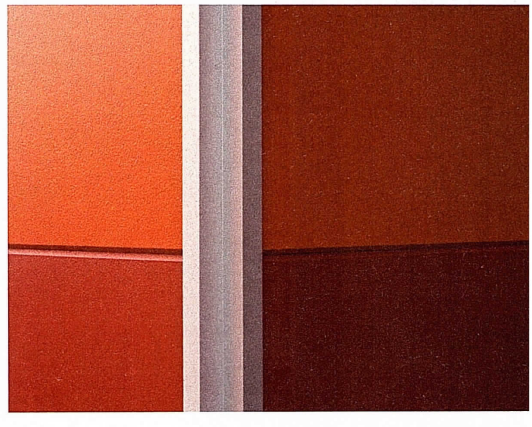


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NEWS

23 GREEN SPORTS VENUES *By Miriam Sitz*

24 PUBLIC SCHOOL STUDENTS EMPOWERED BY PAINTING *By Jack Crosbie*

28 VINCENT SCULLY: 1920–2017 *By Paul Goldberger*

30 NEWSMAKER: JAMES POLSHEK *By Deane Madsen*

DEPARTMENTS

18 EDITOR'S LETTER: A GOOD YEAR FOR ARCHITECTURE

33 HOUSE OF THE MONTH: MORK-ULNES'S MYLLA HOUSE IN NORWAY *By Miriam Sitz*

35 COMMENTARY: PRESERVATIONISTS PROTEST CHANGES TO AT&T BUILDING *By Mark Lamster*

37 GUESS THE ARCHITECT

39 BOOKS: BUILDINGS TO KNOW AND SEE *Reviewed by Erin Hudson*

41 BOOKS: ELIZABETH BEER AND BRIAN JANUSIAK'S *WARD BENNETT* *Reviewed by Kelly Beamon*

43 IN FOCUS: COOKFOX'S NEESON CRIPPS ACADEMY IN CAMBODIA *By Laura Raskin*

49 PRODUCTS: TOOLS FOR SCHOOLS *By Kelly Beamon*

50 FIRST LOOK: KIERANTIMBERLAKE'S LONDON EMBASSY *By Hugh Pearman*

MASONRY BUILDINGS

57 INTRODUCTION

58 HISTORICAL MUSEUM, FRANKFURT LEDERER RAGNARSDÓTTIR OEI *By Mary Pepchinski*

64 MUSÉE YVES SAINT LAURENT, MOROCCO STUDIO KO *By Andrew Ayers*

68 OWSLEY BROWN II HISTORY CENTER, KENTUCKY DE LEON & PRIMMER *By Joann Gonchar, AIA*

BUILDING TYPE STUDY 990 SCHOOLS OF THE 21ST CENTURY

75 INTRODUCTION

76 HAZEL WOLF K-8 E-STEM SCHOOL, SEATTLE NAC ARCHITECTURE *By Sarah Amelar*

82 BRADESCO FOUNDATION OSASCO HIGH SCHOOL, SÃO PAULO SHIEH ARQUITETOS ASSOCIADOS *By Tom Hennigan*

88 GROUPE SCOLAIRE LOUIS DE VION, FRANCE VINCENT PARREIRA ATELIER ARCHITECTURE *By Chris Foges*

94 CHARTER OAK INTERNATIONAL ACADEMY, CONNECTICUT PERKINS EASTMAN *By Alex Klimoski*

100 IGS KALBACH-RIEDBERG, FRANKFURT NKBAK *By Mary Pepchinski*

KITCHEN & BATH

107 INTRODUCTION

108 THE FRENCH LAUNDRY, CALIFORNIA SNØHETTA AND ENVELOPE A+D *By Josephine Minutillo*

112 WONDERLAND PARK AVENUE, LOS ANGELES ASSEMBLEDGE+ *By Leslie Clagett*

114 CHELSEA APARTMENT, LONDON NEIL DAVIES *By Sheila Kim*

116 ONTARIO RESIDENCE, TORONTO SUPERKÜL *By Tanisha A. Sykes*

120 PRODUCTS: KITCHEN & BATH *By Kelly Beamon*

TECHNOLOGY

122 ACTIVE DESIGN SCHOOL BUILDINGS CAN ENCOURAGE CHILDREN TO BE MORE PHYSICALLY ACTIVE *By Katharine Logan*

147 DATES & EVENTS

148 CALL FOR ENTRIES

152 SNAPSHOT: MAD ARCHITECTS' CHAOYANG PARK PLAZA *By Alex Klimoski*

THIS PAGE: IGS KALBACH RIEDBERG, BY NKBAK. PHOTO BY THOMAS MAYER.

COVER: U.S. EMBASSY IN LONDON, BY KIERANTIMBERLAKE. PHOTO BY RICHARD BRYANT/ARCAID IMAGES.

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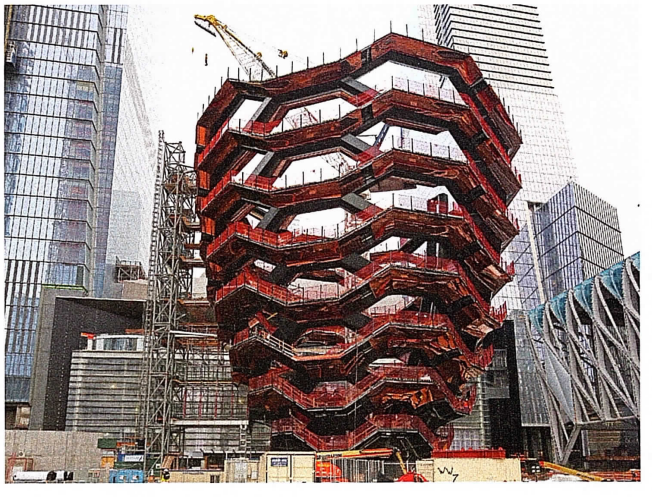
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Beyond the printed page: highlights from our website and live events.



DANCE, PHOTOGRAPHY, AND ARCHITECTURE

Lorcan O'Herlihy's newest residential building, Mariposa 1038 in Los Angeles, became a stage for dancers as part of troupe founder Joe Jonas's #CamerasandDancers initiative. [NEWS, INSTAGRAM]



TOPPING OUT

In December, the last structural beams of two in-progress New York projects were placed: Thomas Heatherwick's sculptural pavilion *Vessel* (above) in the Hudson Yards development, and FXFOWLE's Statue of Liberty Museum on Liberty Island. [NEWS]



DESIGN MIAMI

The annual bacchanal surrounding Art Basel Miami offered early views of the Bass Museum renovation and expansion by David Gauld (above); the Institute of Contemporary Art, Miami, by Aranguren + Gallegos; and recent residential buildings by Herzog & de Meuron and Richard Meier & Partners Architects. [NEWS]



RECENT EVENTS

In October, we honored Elizabeth Whittaker (top, with Record editor in chief behind her), Deanna Van Buren (above, right), Marion Weiss (above), Billie Faircloth, and Sarah Whiting at our annual Women in Architecture Awards in New York. The magazine also hosted a "Record on the Road" event in late November on art and architecture, featuring architects Annabelle Selldorf and Richard Gluckman and museum curators Sheena Wagstaff and David Breslin. [NEWS, FACEBOOK]

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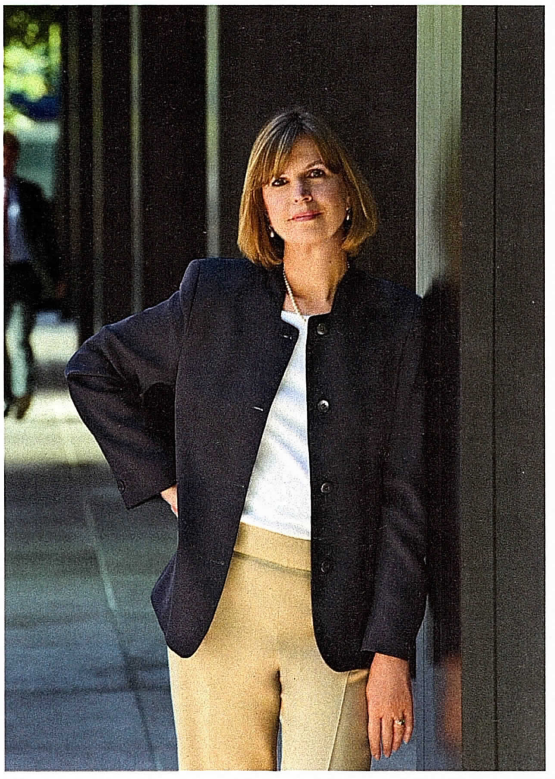
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A Good Year for Architecture

From pavilions in a Japanese garden to a mysterious restaurant and a Jenga-like tower, these were some of our favorite designs in 2017.



Dear Editor of *The New York Times*,

(Yes, you read that right–this is an Editor's Letter that's a letter to an editor.)

Can it really be that in all the "Best of the Year" cultural coverage last month, the newspaper of record could not include a single work of architecture? The *Times* lists best movies, plays, dance, music, books. There even was a list called "The Year in Stuff," which included a $2,145 Balenciaga handbag inspired by the 99¢ wrinkly blue plastic totes from Ikea. But no architecture.

So, at RECORD, we'll fill the gap. Here are some top projects completed in 2017, in no particular order. Visit our website to view images of each.

1. **Louvre Abu Dhabi**, by Ateliers Jean Nouvel. For this big cross-cultural project, Nouvel had a key idea: simple clusters of white-box galleries—luxuriously finished—sheltered by an immense, hovering latticelike dome that admits dappled sunlight down to the indoor-outdoor complex. Voila!
2. **56 Leonard Street**, New York, by Herzog & de Meuron. The skyscraper was arguably born in New York (despite what Chicagoans say), but it's a building type that often seems to resist reinvention. So Herzog & de Meuron's 57-story irregularly stacked Jenga-like tower is a welcome and dynamic addition to the Manhattan skyline.
3. **Pierre Boulez Hall**, Berlin, by Gehry Partners. Frank Gehry is a fan of Hans Scharoun's swoopy-roofed Berlin concert hall, but his own contribution to the city's music scene is a surprisingly simple and serene interior: an elegant elliptical form, clad in warm woods, for a 693-seat hall in Daniel Barenboim's new conservatory, devoted to using music to bridge political and cultural divides.
4. **Japanese Garden Cultural Village**, Portland, Oregon, by Kengo Kuma and Associates. The Japanese architect's first major work in the U.S., this exquisite trio of small buildings in the 20th-century Portland park employs elements from traditional Japanese architecture without succumbing to slavish replication.
5. **Enigma,** Barcelona, by RCR Arquitectes and Pau Llimona. If the architecture of a restaurant is meant to evoke its cuisine, the interior created by RCR, this year's Pritzker Prize winners, with Pau Llimona, would give you no clue about what you were going to eat. The materials used to create the flowing, all-embracing, silvery-gray space with a cloudlike ceiling (manufactured sintered stone; squishy steel mesh) are as hard to identify as some of the ingredients in the exotic dishes served here.
6. **Cornell Tech**, New York, buildings by Morphosis and Weiss/Manfredi. Distinguished as much for the ideas behind it as the architecture, this campus expresses the new identity of a still-experimental pedagogical program for the digital age, combining graduate training and entrepreneurship.
7. **Vijversburg Visitor Center,** Tytsjerk, The Netherlands, by Junya Ishigami & Associates and Studio Maks. An amazing glass-walled pavilion, the structure has curving extensions that slither through a historic park in this small Frisian town.
8. **Auditorium,** Plasencia, Spain, by SelgasCano. Few architects play better with color and unexpected materials than this Spanish duo, who finally finished the interiors of this civic space, delayed by money problems, a decade after it was started. Clad in translucent ETFE panels, it looks as if a giant meteor has landed in a field on the edge of town, while inside, the stairs, walls, and floors are a riot of reds, oranges, and yellows.
9. **Zeitz MoCAA**, Cape Town, by Heatherwick Studio. Heatherwick's main move in converting a former harborside industrial granary into a museum for contemporary African art was to carve enormous voids into the concrete grain silos, some as high as 200 feet, to create a towering atrium of immense vaults and curves, full of drama and mystery.
10. **La Massana Fine Arts School**, Barcelona, by Carme Pinós. The triumph of the building is not just in the angular forms that typify Pinós's work but in the way its complex tailoring fits into a dense urban fabric while fronting a vibrant historic plaza that she also has redesigned.

Maybe next year, *The New York Times* can find some worthy architecture, and we'll forgo the pricey handbag.

Meanwhile, happy New Year to all.

Cathleen McGuigan

Cathleen McGuigan, Editor in Chief

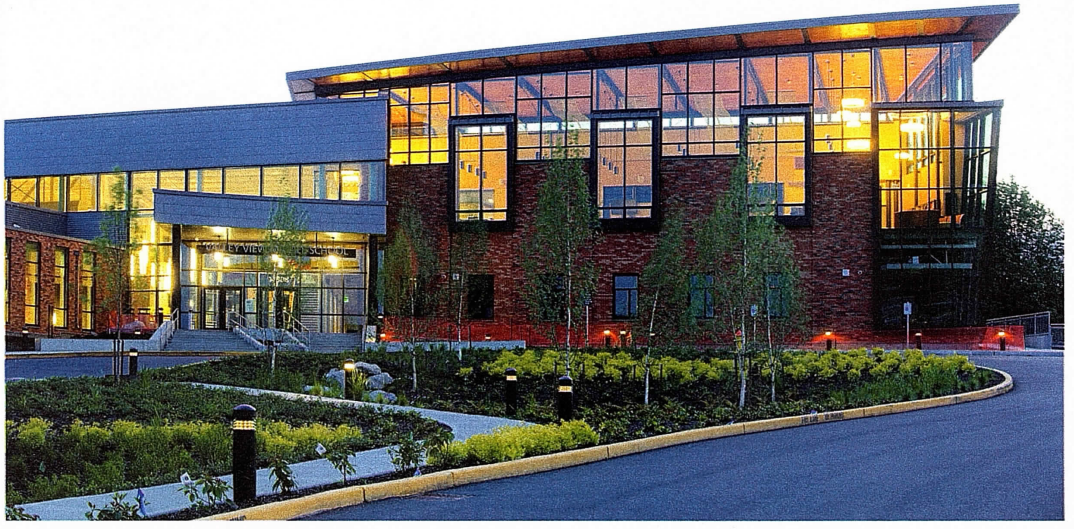

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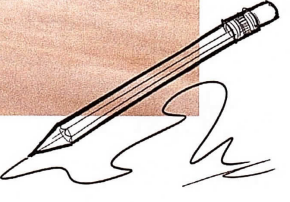
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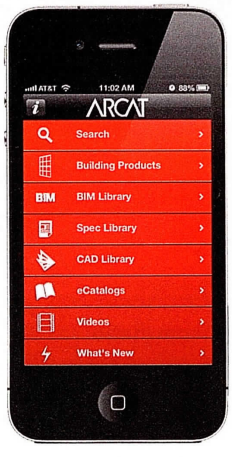
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perspective

I naively assumed I could go to architecture school and fix everything. Architects need to get over ourselves.
—Amanda Williams, at the Design Miami panel "Rethinking the City Through Blackness" on December 6.

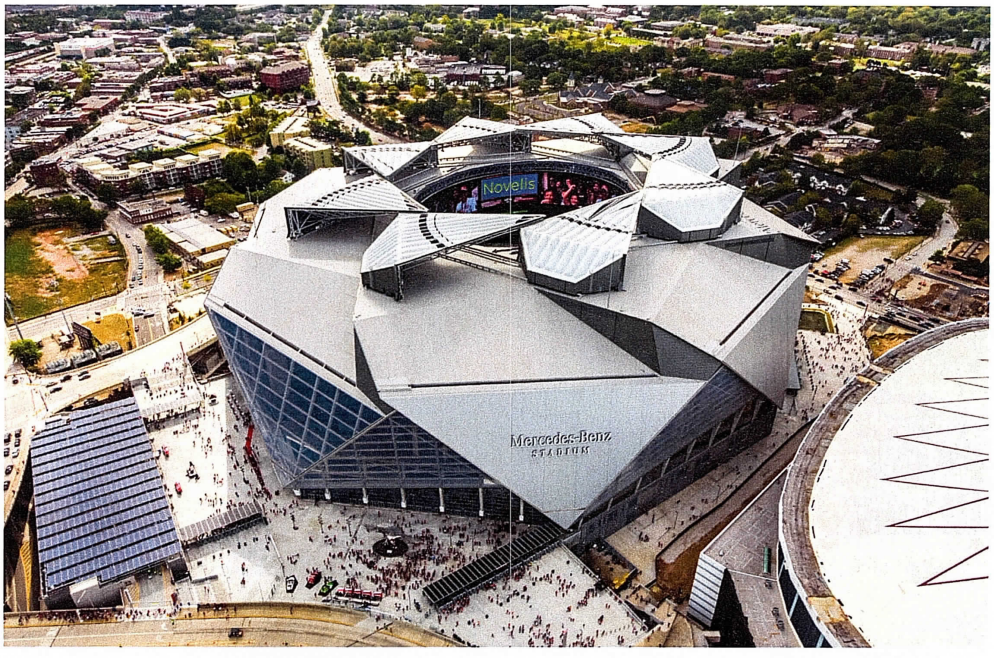
Sports Venues Seek Greener Pastures

BY MIRIAM SITZ

THE ATLANTA FALCONS may not have met expectations for the season, but the National Football League team's athletic facility has already earned the highest marks when it comes to being green. In mid-November 2017, the 2 million-square-foot Mercedes-Benz Stadium in Atlanta became the world's first LEED Platinum–certified professional sports stadium.

Designed by HOK and home to the Falcons and the Atlanta United Major League Soccer (MLS) club, the stadium hosts 4,000 photovoltaic (PV) panels, which should generate 1.6 million kilowatt hours per year—enough to power nine football games—and has enough electric vehicle connections to charge 48 cars at once. Among its many other green features, a 680,000-square-foot cistern can store 2 million gallons of rainwater, for both water-conservation and flood-control purposes. (The project sits at the top of the Proctor Creek watershed, just north of flood-prone downtown Atlanta.)

Worldwide, there are more than 30 LEED-certified sports venues, according to the U.S. Green Buildings Council (USGBC), but with 88 LEED points of a possible 110—the most of any athletic facility to date, and notably earning all possible credits for water—the Mercedes-Benz Stadium is the most impressive, and most recent, example of a growing trend. "Seven or eight years ago, we'd have to bring up the topic of sustainability with clients," says architect Chris DeVolder, the sustainable design leader for HOK's sports, recreation, and entertainment practice, who worked on the Atlanta stadium for almost four years. "Now we're talking about it on every project."





The semitransparent ETFE roof of the Mercedes-Benz Stadium (above) is designed to open like the aperture of a camera, while red photovoltaic panels cover the canopy of the proposed East Austin District (bottom).

The Georgia venue completes a triumvirate of Platinum projects at different scales: in September 2016, the Sacramento King's Golden 1 Center by AECOM became the first professional arena to earn Platinum, and five years before, in October 2011, the USGBC named Apogee Stadium by HKS, at the University of North Texas, the first Platinum collegiate football stadium in the nation.

"Now that we have three Platinum venues in the U.S., I think we're ready to take it to the next level," says Scott Jenkins, general manager of the Atlanta stadium and cofounder of the nonprofit Green Sports Alliance, established in 2010 to advise and connect athletic leagues, teams, and venues at all levels, with the goal of increasing sustainability. According to Jenkins, that could even mean taking on the ultra-stringent Living Building Challenge. "Owners are very competitive," he says. "I think it's just a matter of when, and where, and who wants to up the game."

With 14 years of experience in this sector, HOK's DeVolder has witnessed the growing interest in sustainable design firsthand, which he says started with a push to increase game-day recycling, then grew to encompass more efficient plumbing fixtures and heating, cooling, and energy systems. "In the last five years, these small steps have started to coalesce," he says. "Now we're looking beyond the four walls and starting to talk about the district scale."

As if on cue, the Bjarke Ingels Group (BIG) released renderings in mid-December of a project with just those ambitions: the 1.3-million-square-foot East Austin District, proposed for a site northeast of the Texas capital's downtown. The proposed complex, covered by a checkerboard canopy of red PV panels, is envisioned as a "collective campus rather than a monolithic stadium," said firm founder Bjarke Ingels. It would contain a 40,000-seat outdoor stadium for soccer games and other large-scale events; a 15,000-seat multipurpose arena for Rodeo Austin; and additional space for retail, hospitality, and public plazas.

While the BIG concept is just one of several schemes aiming to bring a world-class venue—and an MLS team—to Austin, it falls in line with a broader theme. "The competitive nature of sports means that you innovate or someone beats you," says Jenkins. "It's just like any other business: you climb with the competition or watch people pass you by." ■

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Public School Students Empowered by Painting

BY JACK CROSBIE



Publicolor students learn the basics of design, color theory, and painting while receiving academic support.

ON A THURSDAY AFTERNOON in early December, students at a public high school on the Upper West Side of Manhattan took over the principal's office, stripping the walls, taping around the doors, and dragging in a paint-spattered boombox. Then they started painting.

Fortunately, Madeline Ciliotta-Young, principal of the Urban Assembly School for Green Careers, had already chosen the color, Sapphire Berry. More to the point, the students—who belong to the school's Paint Club—knew what they were doing, thanks to a New York–based nonprofit called Publicolor.

Ruth Lande Shuman, a Pratt-educated industrial designer, founded the organization in 1996 after completing postgraduate studies on the psychological effects of color in the built environment. She set her sights on improving the prisonlike monotones of buildings in New York's public school system and conceived of Publicolor as a way to give kids in underfunded public schools throughout the five boroughs the opportunity to change their surroundings

(continued)





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By giving students the opportunity to engage in design, Publicolor increases academic achievement, graduation rates, and college enrollment.

(*Empowered by Painting continued*)
using paint and design. The after-school program gained national attention in 2014, when it received the National Arts and Humanities Youth Program Award from Michelle Obama.

Student volunteers learn about color theory and the basics of painting from volunteers and Publicolor staff members, nearly all of whom are alumni from the program's first classes in the 1990s and early 2000s. Then the newly minted youth painters spend a few afternoons a month bringing fresh colors to their school. At the Urban Assembly School, participants have covered swaths of the building's gray concrete walls in light green and sunshine yellow—lively colors that were chosen by schoolwide vote.

"For many of our kids, it's the first time that anybody has asked them their opinion about something, let alone listened to what they have to say about it," Shuman says. "The students feel ownership of their work, and that sense of pride is so powerful."

Publicolor doesn't just teach kids how to paint. The donor-funded program also provides homework help, study halls, career guidance, college prep, and sometimes a stipend for the young people to put their new skills to work painting homeless shelters, soup kitchens, clinics, and other community buildings. In 2016, 44 of Publicolor's 46 high school seniors graduated on time, and 100 percent of them enrolled in college. Shuman says school officials have told her the programs even benefit students who don't participate: 60 percent of the schools where Publicolor works have seen overall attendance increase since the program took root.

In Ciliotta-Young's office, Kayla Porter—a Publicolor staffer who started in the program when she was 11—made sure everyone had something to do. Sudan Muhammad, a 12th grader with steady hands and a masking-tape flower tucked behind her ear, turned her attention to the molding, while a handful of other students mixed paint and started on the rest of the wall.

"It's so satisfying," says senior Quincy Frances, rolling on the second coat of paint. "For me, I like walking around the school and saying, 'Yeah, I painted that. I did that.'" ■

Jack Crosbie is a journalist based in Brooklyn, New York.

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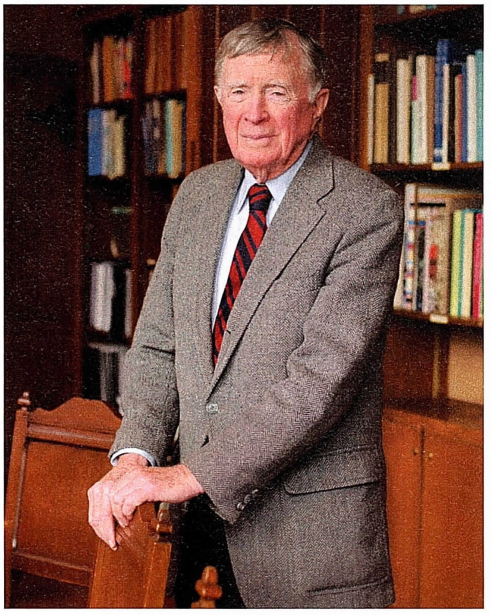
Vincent Scully: 1920–2017

BY PAUL GOLDBERGER

YOU COULD SAY of Vincent Scully, as Philip Johnson did, that he was "the most influential architecture teacher ever," but that would only begin to explain the architectural historian who taught at Yale for the better part of six decades; gave the Shingle Style its name; wrote several of the most important books of the late 20th century, on subjects as wide-ranging as Greek temples, Native American pueblos, and American urbanism; gave impassioned lectures that packed Yale auditoriums; campaigned against the failings of New Haven's urban renewal; effectively launched the career of Louis Kahn and, later, that of Robert Venturi; served as a kind of philosopher-king to the New Urbanism movement; gave the Jefferson Lecture in the Humanities in 1995, had a prize at the National Building Museum named for him in 1999 and won the National Medal of the Arts in 2004; and was mentor to Robert A.M. Stern, David Childs, David McCullough, Andres Duany, Elizabeth Plater-Zyberk, Maya Lin, and countless other architects, scholars, and writers, including, I would humbly add, myself.

Scully, who died at 97 at his home in Lynchburg, Virginia, on November 30, wasn't technically an architecture teacher at all, since he didn't teach students in the Yale School of Architecture how to design buildings. He spent his career in Yale's art history department, where he taught students how to appreciate them. That was the key to his vast sphere of influence: he didn't speak only to architects, but to everyone. Scully taught more future bankers and lawyers and doctors than future architects, and he probably made more of them into good clients, or at least into lovers of architecture, than anyone else who ever lived.

Unlike the celebrity professors of a later generation, Scully did not see teaching as a burden to be fit in between media appearances. It was the heart and soul of what he did, and he almost never missed a class. He came from an age that had no notion of Power Point; he spent hours in Yale's slide library before every lecture, meticulously choosing the images he would talk about, or talk from. The slides would be projected, in pairs, on a huge screen in the large auditorium that was almost invariably filled for his lectures, which were performances as much as anything else. He would stride into the room just as the lights dimmed, mount the platform, and pick up a huge wooden pointer, which he would bang against the screen in frustration if the slide projectionist mixed anything up. The images were always different, and they were memorable because they were not just of buildings, but of so much else: a Franz Kline painting juxtaposed with the plan of a city, Venturi's mother's house beside McKim, Mead & White's Low House, the Saint Gaudens memorial in the Boston Common beside not an image but the words of Robert Lowell's poem "For the Union Dead."



Architecture makes a human order—an illusion, but a great one—in the heart of nature's world.

—VINCENT SCULLY, delivering the 1996 Raoul Wallenberg Lecture at the University of Michigan's A. Alfred Taubman College of Architecture and Urban Planning.

That was the essence of Scully: he taught that architecture was not just about shape and form but about everything in the culture. He had started out as a student of English literature, and he was always able, more than most art historians, to connect the visual to the verbal. His subject was not buildings so much as it was the role buildings played in the making and the preservation of community. If his critical eye had not been so sure, if his grasp of form not so acute, he might have seemed almost too earnest. He had heroes, and villains, and he had a tendency, sometimes, to see things in black-and-white terms. (He agonized over whether or not to accept the National Medal of the Arts because it was to be conferred upon him by George W. Bush, whose policies he despised.)

He certainly could never be accused of hiding his passions. First there was Frank Lloyd Wright and then there was Louis Kahn, whose work he championed early—he helped persuade Yale's president in the early 1950's, Whitney Griswold, to hire the little-known Kahn to design the 1953 extension to the Yale Art Gallery, and later wrote the first book about Kahn. And then there was Robert Venturi, whose *Complexity and Contradiction in Architecture* Scully helped publish, and which he called in his introduction "the most important work on architecture since Le Corbusier's *Vers Une Architecture*."

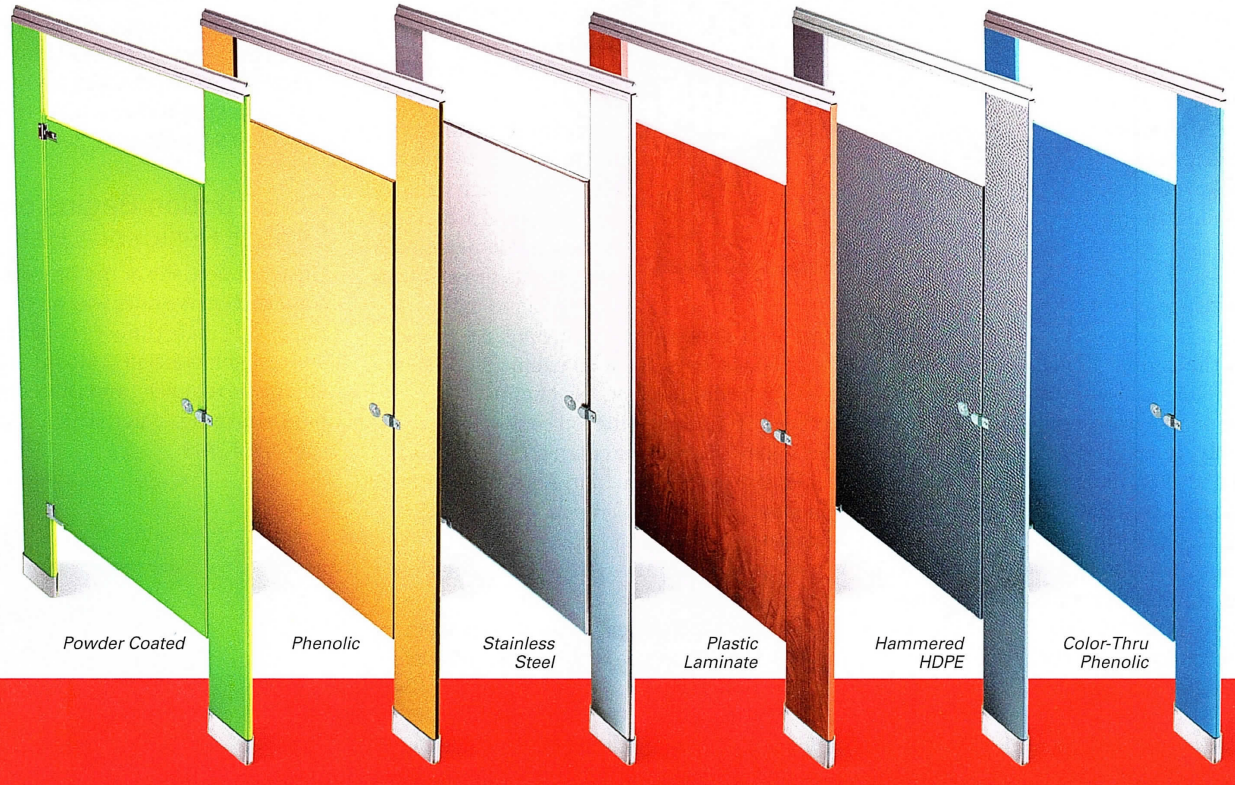
Scully started his career as an unabashed celebrator of the most heroic ambitions of modernism, which he came, gradually, to question. Not the least of his gifts as a teacher was his ability to admit to both his students and his readers that he might not have been right, and that he had changed his mind. Ultimately he would come to think of urbanism as equally important to form-making, and to cherish older buildings so much that he became an ardent preservationist. He expressed regret for failing to speak out against the demolition of McKim's Pennsylvania Station, saying, in what became one of his most famous lines, "One entered the city like a god. Now you scuttle in underground, like a rat."

In 1969, Scully wrote, in a far less quoted line, that art history had to be "conservative, experimental, and ethical." It was a remarkable trio of words, not least because of the apparent contradictions it embraced. Scully knew that art history had to respect the past, since learning from the great work of history is central to its mission; at the same time, he wanted to make the point that the real value of understanding the architecture of the past is to inspire the highest creativity in the present. And he believed that the noblest mission of architectural history, at least as he practiced it, was to encourage the building of community, and the betterment of civilization.

Paul Goldberger is an architecture critic and contributing editor to Vanity Fair.

Visit architecturalrecord.com to read tributes to Vincent Scully by former students and friends, including Robert A.M. Stern, Sid Bass, Neil Levine, Alexander Gorlin, Andres Duany, and Elizabeth Plater-Zyberk, as well as his widow, Catherine "Tappy" Lynn.

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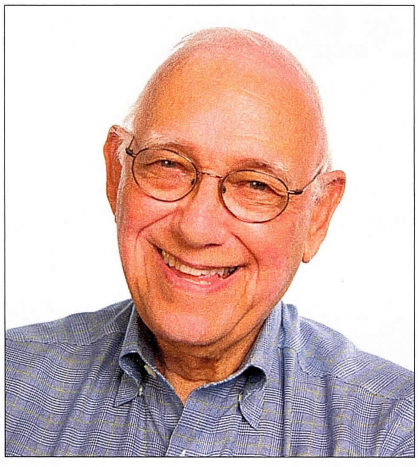
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James Stewart Polshek, FAIA

BY DEANE MADSEN

"I thought it was a robocall," James Polshek says about answering the phone to news that he'd won the 2018 American Institute of Architects (AIA) Gold Medal. "It was a chilly day, and I was walking up 6th Avenue after leaving a chronologically required hearing test, when the phone rang." Polshek is 87, but could hear the news just fine: "At that point, I kind of lost my breath," he says. "I was laughing and sobbing simultaneously, with enjoyment, pleasure, and some disbelief."



A 1955 M.Arch. graduate of Yale University, Polshek founded his eponymous firm in 1963, which evolved through the years to become Ennead Architects in 2010, five years after his retirement. He spoke with RECORD by phone after learning about the AIA award.

Which projects are you proudest of, and why?

You know the saying, "If you have many children . . ." The most obvious one is perhaps the most nationally prestigious: the Clinton Library. But my two favorites came in succession in 1969 and 1972 and gave me the confidence to pursue the way I wanted to practice. The first was the New York State Bar Association in Albany, which won the 1972 AIA Honor Award for merging a historic building in a historic district with a modernist interpretation. The second is called the Five County Consulting Center in Columbus, Indiana, which solved environmental and ecological problems, as the building is a bridge over a creek that flooded severely. We used some of the foundation budget to stop the Army Corps of Engineers from simply widening the creek. Those two together—and the various themes that connect to later projects—were seminal.

As a past dean of Columbia University's Graduate School of Architecture, Planning and Preservation, what would you say about the core values young architects should learn and how they can prepare for the profession?

I encourage younger people to study architecture if they feel it in their bones, but not to be deluded early on by an excessively romantic notion that design is the be-all and end-all; there are many ways to practice architecture. Architecture inherently is an intellectual discipline, but it's also a boot camp.

My first job was in I.M. Pei's office when it was very small, 12 people or so, and it was embedded within the office of real-estate developer William Zeckendorf. There was such an ethos of excellence in the air. Everything was done with such loving care, and there was a great deal of mutual respect. I was low man on the totem pole, designing elevator cores, nothing terribly romantic.

I learned a lot there, and I transferred a lot of what I learned to my own firm. I also recognized talent: people were hired and mostly never left. Encouragement became contagious. There were attitudes I expressed that began to inform a specific, collaborative practice.

How did the firm evolve?

It changed from a single name three or four times, each time becoming more distant from a single-person-led practice. Its growth was beginning to make me nervous. It's one thing when you have a practice of 30, 40, even 50 or 60 people, but when it gets to be double that, the chemistry changes. So I decided to step back slowly, starting in '05, Five years later, I made a clean break, and they renamed it. A name is far less important than quality of work, and that's remained very high.

What kinds of moral or ethical codes become embedded in your work?

From the beginning, I steered away from projects that didn't make a specific, verifiable contribution to the common good of the place in which they were to be. You can't lose sight of who'll ultimately be affected by what you do. I have colleagues and friends who'd argue with me that architecture is an apolitical pursuit. There is this inborn professional schizophrenia: whether it's possible to rationalize buildings as purely built form or as political contributors to the context in which they exist. But architecture is neither one nor the other. That's nonsense—not even neurosurgery is apolitical. Most people who came to the office came to agree and felt stimulated by the environment we worked in. I hope that's a legacy I'll leave behind. ■

noted

Adjaye Associates Announces First Residential Tower in NYC

The London- and New York–based firm has unveiled designs for its first large-scale high-rise building in Manhattan. Clad in hand-cast concrete with bronze detailing, the 66-story tower dubbed 130 William will include 244 luxury units ranging from studios to five-bedroom condos.

RIBA Releases Shortlist for 2018 International Prize

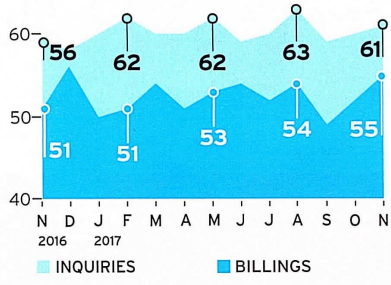
The Royal Institute of British Architects has announced the 62 finalists for the 2018 International Prize—the second iteration of the prestigious biennial prize. The grand jury, chaired by Elizabeth Diller of Diller Scofidio + Renfro, will name a winner in December 2018.

Work Halts on Shrine at World Trade Center

Skanska has suspended construction on the Santiago Calatrava–designed Saint Nicholas National Shrine at the World Trade Center in New York, citing the Greek Orthodox Archdiocese of America's failure to make payments. The shrine replaces a chapel that was destroyed during the attacks of September 11, 2001.

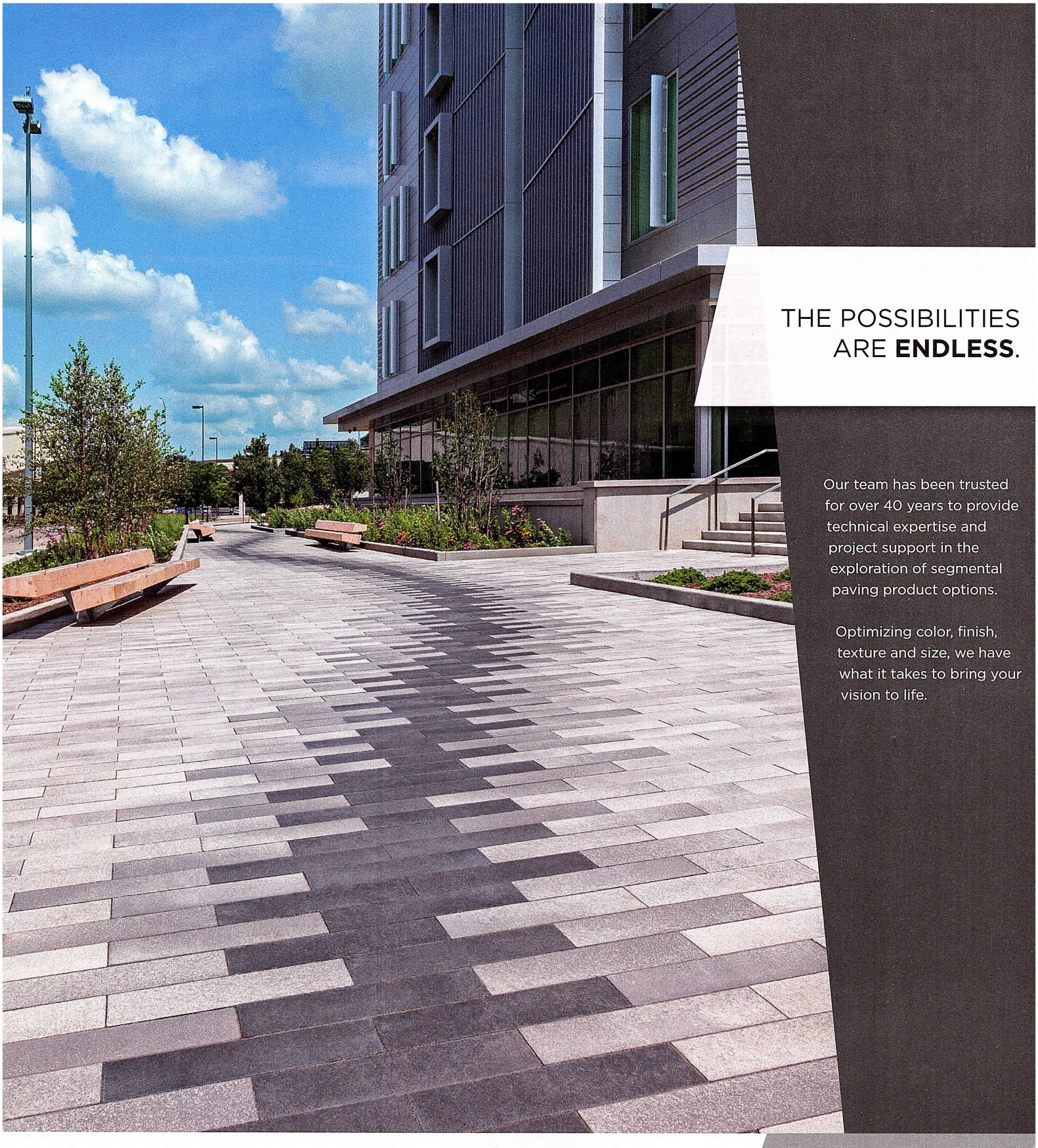
Construction Begins on First Mass Timber Residence Hall

On a four-acre site at the University of Arkansas, construction is under way on the nation's first large-scale mass timber residence hall. Leers Weinzapfel Associates, Modus Studio, Mackey Mitchell Architects, and OLIN designed the living-learning center, which is slated to open in the fall of 2019.



Billings Upturn Signals Strength

New data released by the AIA reveal that the November Architectural Billing Index (ABI) rose to 55, up from 51.7 in October. (Scores above 50 indicate an increase in billings.) The new projects inquiry index and the new design contracts index also saw an uptick, to 61.1 and 53.2, respectively. The figures show "surprising momentum" in the construction industry, says AIA chief economist Kermit Baker.



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perspective**house of the month**

A FORMER DESIGN VANGUARD WINNER PUTS A MODERN SPIN ON A TRADITIONAL NORWEGIAN CABIN FOR AN AMERICAN FAMILY. **BY MIRIAM SITZ**





IN NORWAY, owning a cabin isn't a trend or a luxury; it's practically an essential part of the culture. Stemming from the German word *Hütte*, meaning hut, a traditional Norwegian *hytte* is a small, utilitarian, and often prefabricated cottage where nature takes center stage. When Scott and Christine Young moved with their two daughters from Houston to Oslo for work, they decided to put down roots in Norway, and asked their friends Casper and Lexie Mork-Ulnes of Mork-Ulnes Architects—a 2015 RECORD Design Vanguard firm based in San Francisco and Oslo—to design a second home. They wanted an outdoorsy yet comfortable retreat, close to the hiking, biking, and fishing spots that they enjoy.

For a site overlooking Mylla Lake, just over an hour north of Oslo, the architects designed a two-bedroom, 940-square-foot cabin. It is clad in untreated heart pine planks and deviates from the single-gable roof typical of *hyttes*. Four connected volumes, each with a steeply sloped roof representing one half of a gable, pinwheel out from the house's center. The structure's plan allows for two protected porch areas that face the rising or setting sun and creates unique views of the lake, forest, hillside, or sky from each room. The striking roof angles differentiate the cabin from its neighbors and allow natural light from generous windows to spread throughout the interior. They also serve the utilitarian purpose of funneling snow away from the porches. "Here in snow country, you have to be careful where the snow sheds," says Casper, a native Norwegian. "You don't want it to land on your head."

Interior walls and ceilings are clad in pine plywood treated with lye and white oil, giving them a luminous finish. The topography of the roof carries through inside, where large glass transoms above the bedroom doors disperse light while buffering sound. Heated concrete floors are comfortable on cold days and also easy to clean when booted feet track slush indoors. With the exception of a few chairs, all of the plywood built-in furniture was custom designed by Lexie and offers storage space. "Everything has multiple functions," she says, noting how the kitchen island forms the back of the dining room bench, and the sofa includes two twin mattresses set end to end.

The Mylla House itself is multipurpose: it's a place for the Youngs to retreat to from their weekday urban existence, but, more than that, it's a place for them to be together as a family, putting their own spin on the customs of their new country. ■



FLOOR PLAN 0 6 FT. 2 M.

1 ENTRANCE
2 LIVING/DINING ROOM
3 KITCHEN
4 BEDROOM
5 BUNK ROOM
6 PATIO





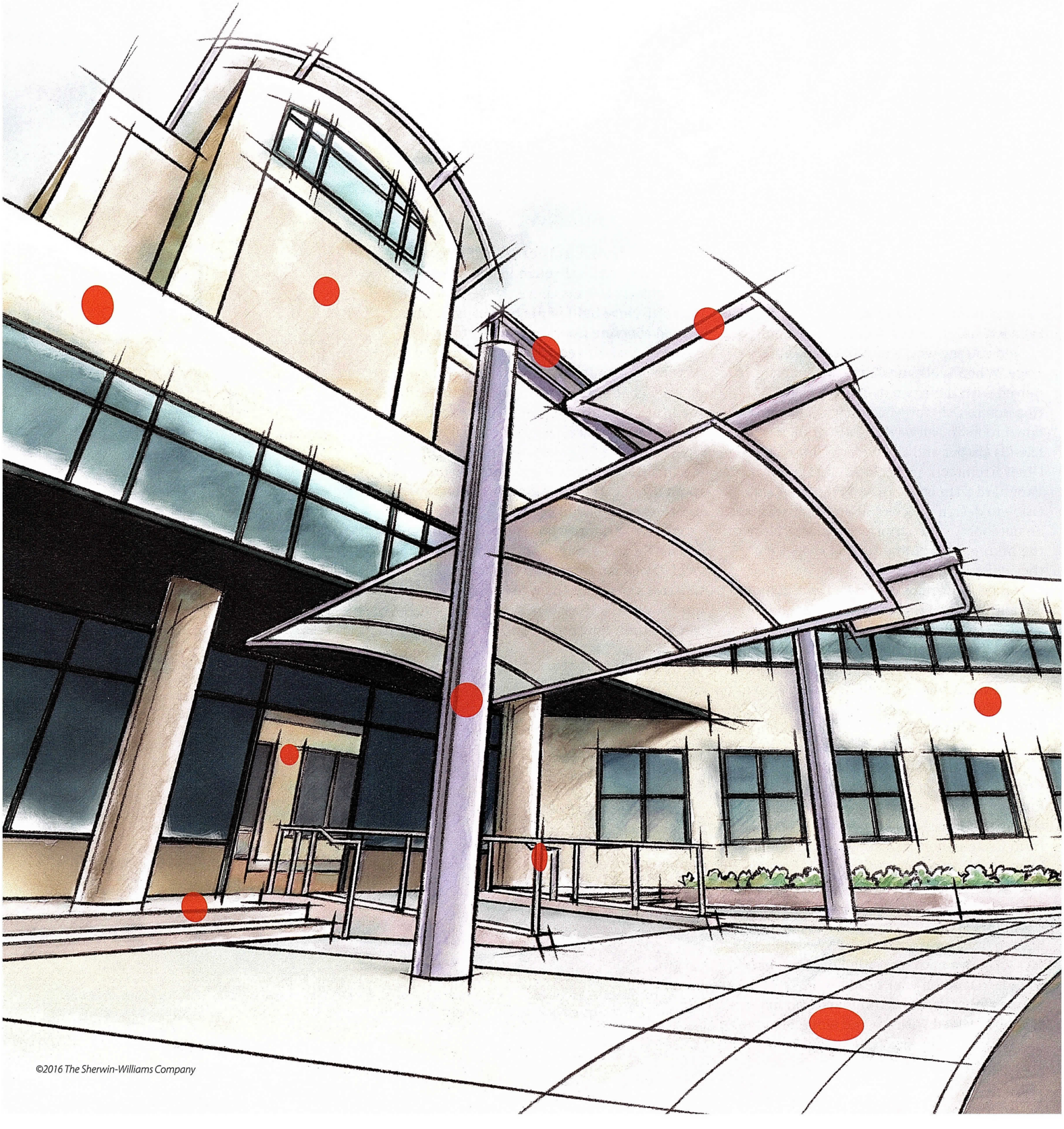
Clad in pine planks, the cabin will weather to a silver gray over time. The steep half-gables of the roof keep snow from shedding on doorways and patios (top, left and right). Custom built-in furniture in the children's bunk room (above, left) and family room (above, right) offers hidden storage and extra sleeping space.

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A Po-Mo No-No

Preservationists Protest Changes to the AT&T Building

BY MARK LAMSTER

THIRTY-ODD YEARS AGO, if you had announced a plan to rip apart the base of Philip Johnson and John Burgee's AT&T tower in New York, you would have had a line of architects stretching down Madison Avenue hoping for the chance to swing a sledgehammer blow against America's most controversial (and hated) new building.

How times change. In November, architects and preservationists gathered in front of the Chippendale-capped building to protest a plan by Snøhetta architects that would do just that. Produced for a development team led by the Olayan Group, Snøhetta's scheme would replace the pink granite front facade at the lower levels with a diaphanous glass curtain wall. The building's Postmodern monumentality would be replaced by the kind of transparency made fashionable by Apple stores everywhere.

That proposed design would also summarily undermine the building's architectonic integrity, which is predicated upon the solidity of its base. What would become of the lobby interiors is unclear, but the facadectomy would completely transform their coherence. The entire endeavor has the whiff of marketing rather than architecture, an attempt to generate excitement for a building that has been vacant since its last owner, the Sony Corporation, departed in 2016.

Such draconian steps are unacceptable because, loved or loathed, the tower's significance both as a work of architecture and a defining piece of New York's built history is indisputable.

That sense is widely shared. Upon the release of the proposal, outrage spread rapidly on social media, generating the hashtag meme #saveATT, before moving into the streets. "Hands off my Johnson," read one memorable placard at the demonstration in front of the building. (Manning the barricades was no less an eminence than Robert A.M. Stern, his presence recalling a time decades earlier when Johnson, his mentor, had taken to the streets to protest the demolition of McKim, Mead & White's Pennsylvania Station.) What was once America's most notorious new building is now a bona fide Postmodern icon.

It may become an official one, as well. The tower, now simply 550 Madison Avenue, is just barely old enough for landmark designation, and preservationists hastily moved forward on their applications in response to Snøhetta's proposed alterations. It is now grinding its way through the bureaucratic machinery of New York's Landmarks Preservation Commission.

The building was a polarizing Postmodern landmark well before it opened, in 1984. Five years earlier, Johnson had appeared glowering on the cover of *Time* magazine with a slablike model of the building cradled in his hands as if it were a tablet delivered from the heights of Mt. Sinai. "Johnson did not create the way of thinking that his building reflects," the critic Robert Hughes wrote in the accompanying story, "but he helped bring it about, and now he has given it a degree of public validity that cannot help affecting other corporate clients."



Philip Johnson on *Time* cover January 8, 1979.

While it did boost the Postmodern movement, Johnson's "way of thinking" was never quite clear. Was the whole thing one of his wink-wink, nudge-nudge jokes, as the highboy top suggested? Or was he serious, as the monumental base, with its gloomy arcades, would have one believe? It was hard to tell, and Johnson, who liked to keep people guessing, played it both ways, depending on who asked.

That attitude did not sit well with critics. In the *Times*, Ada Louise Huxtable described the AT&T as a "monumental demonstration of quixotic aesthetic intelligence rather than of art." Writing in *The Village Voice*, Michael Sorkin was even less generous: "The so-called 'post-modern' styling in which AT&T has been tarted up is simply a graceless attempt to disguise what is really the same old building by cloaking it in this week's drag, and by trying to hide behind the reputations of the blameless dead."

At least technically, Sorkin was not quite accurate, and therein lies the root of the current predicament. AT&T is in fact not the same old skyscraper but a bespoke tower, tailored to the desires of what was then America's preeminent corporation. Though it rises to the height of a 60-story building, it is in fact only 36—the product of luxuriously tall floors and of its arcaded base, which reaches up six stories to an elevator "sky lobby" with a mural by the artist Dorothea Rockburne. (The fate of the painting is uncertain in the Snøhetta renovation.)

The corporation that the tower was tailored for never got to live in it, and its various successors have struggled with its eccentricities. By the time it was finished, At&T was a shell of its former self, having been forced by federal courts to give up its monopoly on all telephone service in the U.S. Less than a decade later, the corporation sold the building to Sony, which commissioned Gwathmey Siegel to enclose Johnson's monumental ground-floor arcade and transform it into retail space.

That was an ill-conceived decision, and one that Snøhetta must grapple with today as it tries to turn the building into a functional contemporary office tower. To the firm's credit, it has proposed an expansion of the public arcade behind the building, to be accomplished by the demolition of a freestanding annex structure, conceived as a museum, that has never been successful. Better access to those expanded pubic spaces would be welcome.

"We're trying to take in constructive criticism," says Snøhetta partner Craig Dykers, who has promised adjustments to the plan. "We're trying to make a positive way forward."

But moving forward should not entail erasing the past, however complex and contradictory that might be. ■

Mark Lamster, architecture critic of The Dallas Morning News, *is the author of a forthcoming biography of Philip Johnson.*



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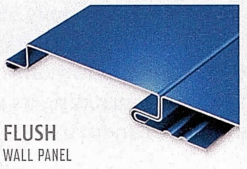
-Mary Beth Branham, Principal, LS3P



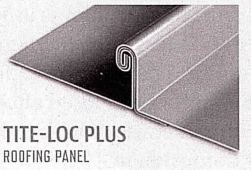
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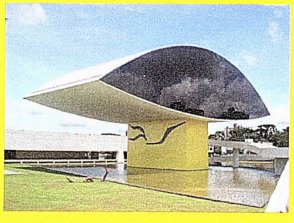
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The architect for the December issue's contest is **OSCAR NIEMEYER**, the Brazilian visionary known for his curving *béton brut* forms. He designed the eye-like concrete annex (left) in the early 2000s for his Presidente Humberto Castelo Branco Building, completed in 1978. The complex is now called the Museu Oscar Niemeyer.

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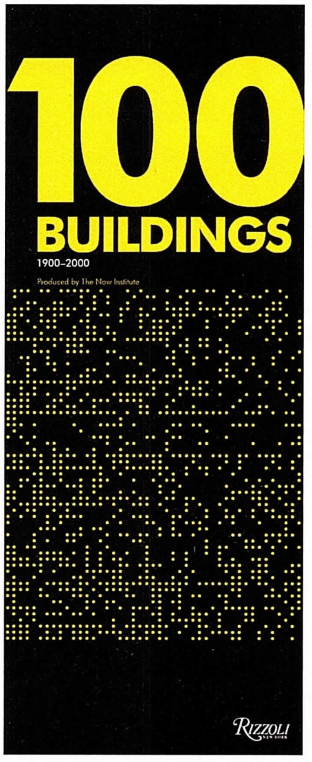
Must Know, Must See

Reviewed by Erin Hudson

100 Buildings: 1900–2000, *by Now Institute, Rizzoli, 304 pages, $25.*

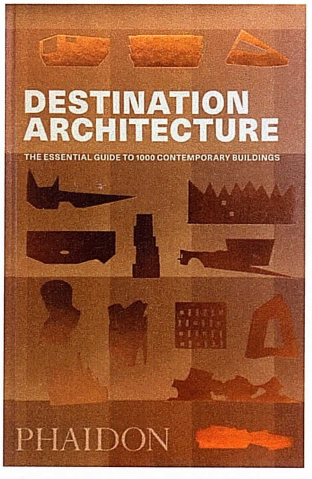
Destination Architecture: The Essential Guide to 1000 Contemporary Buildings, *by Phaidon editors, Phaidon, 560 pages, $29.95.*

REFERENCE BOOKS and lists of top architectural works abound, but UCLA's urban research group, the Now Institute, transforms the clichéd idea into a useful resource, thanks to a novel methodology.



The project got its start in an unusual way. About five years ago, a student presented her final thesis to UCLA professor and Morphosis founder Thom Mayne and a panel of jurors. Her concept sparked conversation among the gathering about the Japanese movement Metabolism and, specifically, Kisho Kurokawa's 1972 Nakagin Capsule Tower. When asked about this connection, the student hadn't heard of Kurokawa, his project, or the movement.

Mayne felt compelled to take action—particularly after colleagues ratified his sense that students don't know history. The architect decided to create a book to help these future architects understand and recognize the most influential 20th-century buildings.



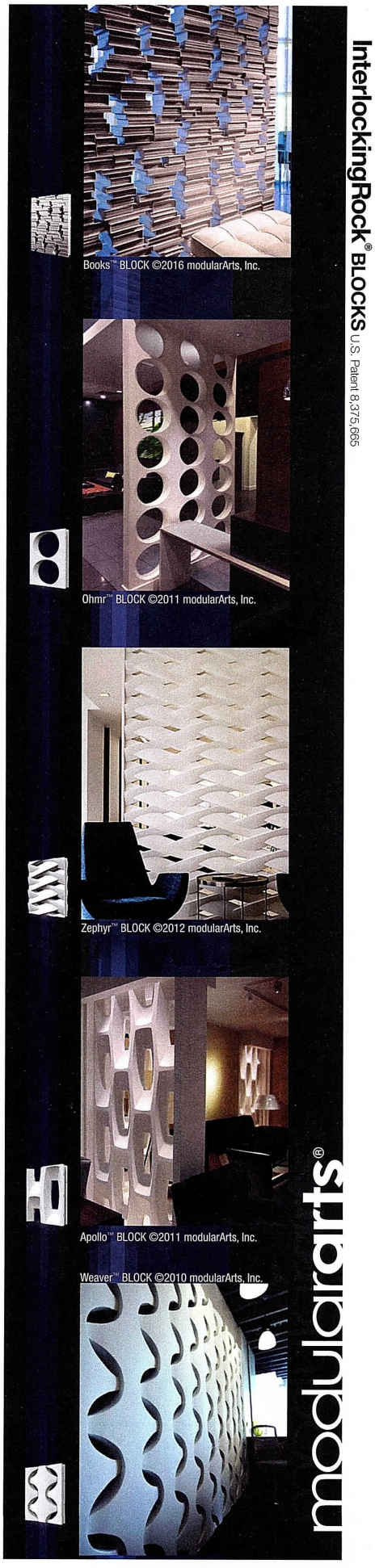
To generate the final list of 100 such buildings, the Now Institute, cofounded by Mayne and led by Morphosis principal Eui-Sung Yi, surveyed more than 40 well-known architects, many of whom teach, asking them for a list of significant buildings. Yi and his team then cross-referenced the submissions to see how frequently a building appeared and ranked them in order of the votes. All these working documents are included, revealing such tidbits as Mayne's considering his own design for Diamond Ranch High School (No. 44) to be in the top 100. (Obviously, others agreed.)

Though a few traditional architects, such as Robert A.M. Stern and Leon Krier, participated, there are few surprises among the final selections by the mostly modern American, European, and Japanese respondents. Buildings, such as Le Corbusier and Pierre Jeanneret's Villa Savoye (No. 1) or Foreign Office Architects' Yokohama International Port Terminal (No. 100), are presented with three drawings, a compelling photo, and an informative description.

The published methodology and data make for a fun and fascinating read. But the book's organization is perplexing, since buildings are ordered according to their rank: the book ricochets from decade to decade, country to country, making larger movements challenging to discern.

Destination Architecture, on the other hand, is intended as a handbook to 1,000 buildings constructed worldwide in the past 30 years, a compendium of those considered "most compelling" and worth visiting. Selected by editors at Phaidon, the traveler's guide is ordered according to geographic region, with a series of maps—reminiscent of the publisher's tome *The Phaidon Atlas of Contemporary World Architecture*, first issued in 2004. A single photo of each building is accompanied by a concise caption and a note marking the degree of public access.

However, it is not clear what qualifies or disqualifies a project. For instance, the tallest building in the world, Dubai's Burj Khalifa, is missing. In the New York section, both the Museum of Modern Art expansion by Yoshio Taniguchi and Weiss/Manfredi's Brooklyn Botanic Garden Visitor Center are absent. That said, the guide spans 70 countries and gives architecturally inclined tourists suggestions of many worthwhile sites to visit. ■





Michael Green Architecture + DLR Group | Photo: Ema Peter

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T3 is a 7-story mass timber commercial building in Minneapolis that is signaling disruption in commercial development. Constructed with prefabricated NLT panels and glulam beams + columns throughout, it did not require code exemptions.

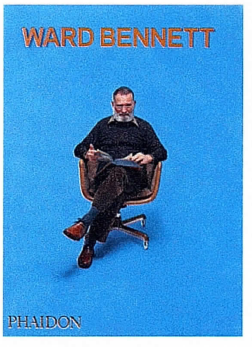
The 224,000 sq. ft. wood portion of the structure went up in only 9.5 weeks, was economical to build, and has drawn desirable tenants. With office and commercial retail construction expected to reach $165.1 billion in 2018, more buildings like T3 are on the way.

ThinkWood.com

Elements of Style

Ward Bennett, *by Elizabeth Beer and Brian Janusiak. Phaidon, 271 pages, $95.*

Reviewed by Kelly Beamon



THIS WELL-DOCUMENTED testament to Ward Bennett's power as a designer is also a uniquely American success story. Edited by Elizabeth Beer and Brian Janusiak, the book, which explores the 50-year career of this autodidact, includes a philosophically sympatico foreword by designer John Pawson; a substantive biographical essay by Pilar Viladas, former design editor for *The New York Times*; and a 1973 interview with Paul Cummings, then-director of the Archives of American Art's oral history project. The monograph is the first to chronicle Bennett's prolific creative output, ranging from fashion, jewelry, and flatware to furniture, interiors, and architecture.

Readers unfamiliar with Ward Bennett's name will quickly recognize his furniture as exemplary of a sleek, postwar modern style: his Tufted Lounge chair, Scissor chair, I-Beam tables, and H-Frame storage are all still produced by Herman Miller. His understated aesthetic included the University Chair, made for the LBJ Presidential Library in Austin. Famous for their clean, functional elegance, these designs are still being rediscovered by creative directors at such places as Bottega Veneta and Tiffany & Co.

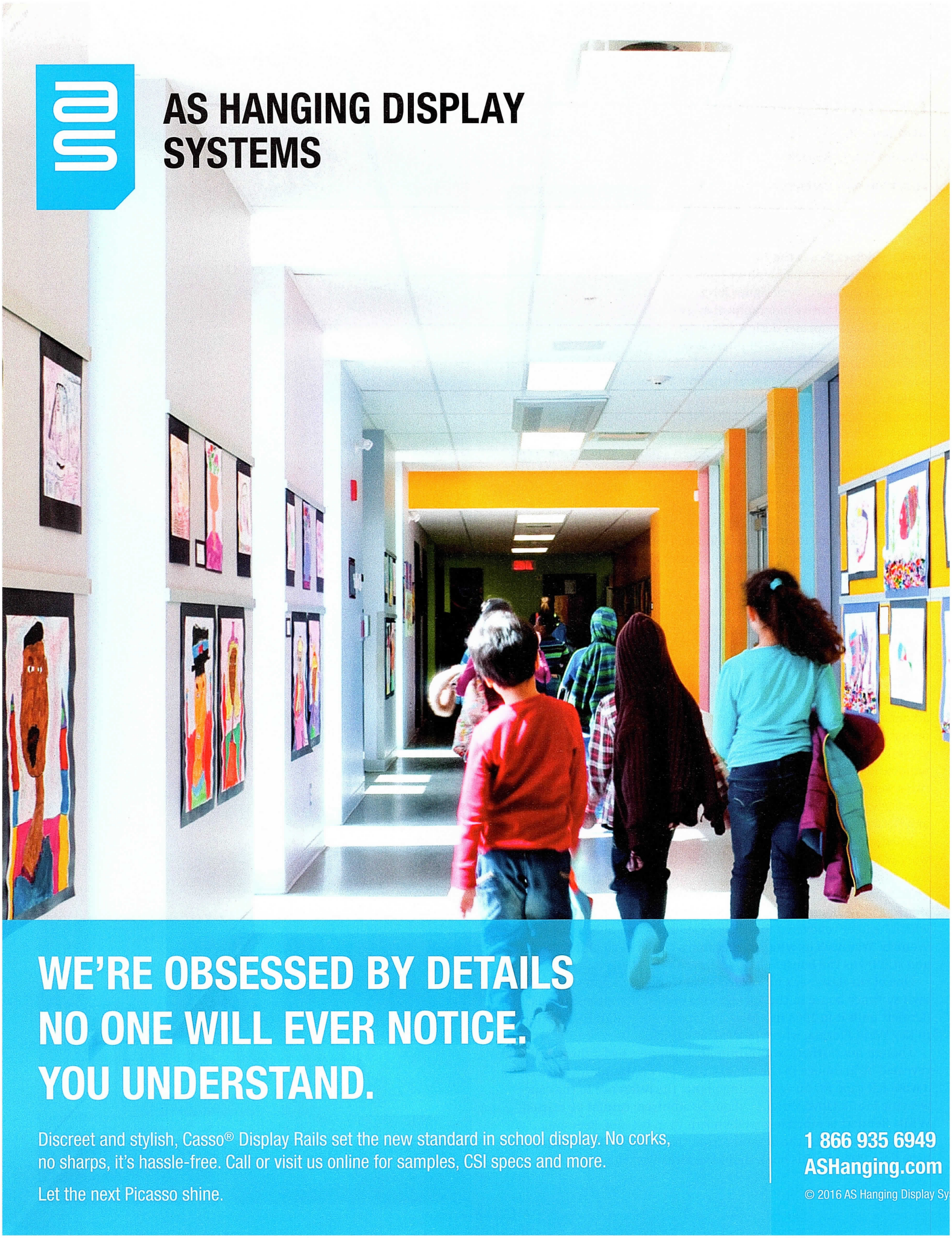
The son of a vaudeville actor from Washington Heights in New York, Bennett described his childhood as unhappy. Yet he led a colorful life. After leaving home and school at age 13, he worked in a series of odd jobs around Manhattan's garment district until his skills at sketching helped him rise through the ranks at various fashion houses, one of which sent him to the Paris shows at age 16 and marketed him as a designer. When he returned to the States, he was affecting a British accent and wearing a moustache, ready to launch the next phases of his design career. Bennett soon returned to Europe, where he studied art for several years. By the 1940s, the cosmopolitan New Yorker was creating window displays for shops such as Hattie Carnegie. In 1944, his sculptures were shown at the Whitney Annual, and, two years later, his jewelry was exhibited at the Museum of Modern Art, where his vases and flatware are now part of the permanent collection.

Viladas points out that, despite such early recognition, Bennett worried throughout his life, as friends recall, about how others saw him. But that did not stop him from branching out into new design endeavors. Although he did not have an architecture degree, he designed a large house for Hale Allen in Amagansett, New York, in 1970, which he later renovated for *Rolling Stone* magazine publisher Jann Wenner. Wenner's ex-wife Jane became a close friend and repeat client and still owns the house.

One of the designer's most successful works of architecture was his own summer house in the Springs area of East Hampton, Long Island. Bennett built it in 1968 in a Miesian, wood vernacular. He later moved to Key West, Florida, where he died, at age 86.

Though his aesthetic was minimalist, Bennett had a theatrical side, revealed by an image in the book of him shown dramatically swirling a wool felt cape for an advertising photo; the reference to the cape-wearing Frank Lloyd Wright, whom he admired, cannot be missed. While Bennett is much less well-known than his idol, Beer and Janusiak want to lift the designer from the shadows. They write, "We have long thought this book should've already existed." ■




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A Door to the Future

Informed by the vernacular, a new high school in Phnom Penh, Cambodia, helps to regenerate a community.

BY LAURA RASKIN
PHOTOGRAPHY BY DAVID YEOW



THE SOUTHERN WING OF THE NEESEN CRIPPS ACADEMY IS RAISED ONE LEVEL ABOVE GRADE TO AVOID FLOODING IN CAMBODIA'S RAINY SEASON. THE CLASSROOMS IN THIS EAST-WEST-ORIENTED WING ARE NATURALLY VENTILATED.

DURING A RECENT reception at the midtown-Manhattan office of COOKFOX Architects, celebrating the firm's completion of the Neesen Cripps Academy—a 40,000-square-foot secondary school in Phnom Penh, Cambodia—partner Richard Cook described visiting that city's Stung Meanchey landfill in 2008. At the time, he saw children, many of them abandoned by their parents, roaming the sea of festering trash in this 100-acre facility—now closed, but located near the site of the new school—looking for scraps to sell. "Some piece of me was left there that day," he said.

The Cambodian genocide carried out by the Khmer Rouge regime between 1975 and 1979 left a legacy of poverty (the landfill scavenging being just one example) and ruptured families so extensive that it can still be felt and seen today. "The impact will go on for generations," says Cook, whose ties to the country are personal and professional. He and his wife adopted twin Cambodian boys in 2002, and COOKFOX designed the Friends Center for the Angkor Hospital for Children, Cambodia's leading pediatric-care facility, which was completed in 2008.

The Neesen Cripps Academy, the most recent addition to the firm's pro bono portfolio, was completed in February 2017 and serves 400 children per year, ranging in age from 13 to 18. Established to provide a high-quality education for Phnom Penh's most disadvantaged children, the school offers a robust English-language program, STEAM subjects (Science, Technology, Engineering, Art, and Math), and access to the latest digital technologies. Many of the children who gleaned on the landfill are now students at the Academy. The thoughtfully designed L-shaped building sits on what was a tract of land strewn with garbage and plastic bags, and ringed with ad hoc dwellings.

The design team split the school building into two wings. One, a long concrete volume oriented east–west, contains five floors of open-air classrooms. It is raised a level above grade to create a protected arcade—particularly important during Cambodia's rainy season—that leads to a courtyard. A





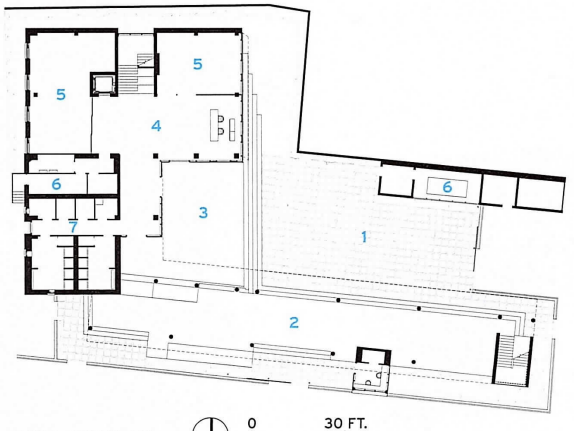
HIGH MINDED The L-shaped school features a rooftop sports court and teaching garden (above). Its north-south volume, for science and technology, has terra-cotta fins for shading and a photovoltaic array on the roof that provides a portion of the school's energy needs (right).







LEVEL-FOUR PLAN



LEVEL-ONE PLAN

0 30 FT.
10 M.

1 YARD
2 COVERED BREEZEWAY
3 ENTRY PLAZA
4 LOBBY
5 MULTIPURPOSE ROOM
6 MECHANICALS
7 RESTROOMS/SHOWERS
8 OFFICE/WORKSPACE
9 CLASSROOM
10 OUTDOOR CLASSROOM

THINK LOCAL Bamboo lattice on the south elevation (above) screens open-air gathering spaces (opposite, top) and naturally ventilated classrooms (opposite, middle). The ceiling of the school lobby is also clad in bamboo (opposite, bottom).

second, fully enclosed, terra-cotta-block volume to the northwest contains the school's science and technology labs, which require highly efficient mechanical systems that keep the equipment in a tempered environment. Deep horizontal and vertical terra-cotta fins shade its low-E coated glass window wall (the floor slabs extend outward for further solar shading).

"One of the challenges was making a building that was state-of-the-art while still reflecting forms and materials that were familiar and recognizable to the neighborhood," says COOKFOX partner Pam Campbell. The open-air wing, she says, is a nod to Cambodia's wonderful modernist architecture, from before the Khmer Rouge rampage. A delicate and environmentally friendly bamboo screen shades its southern facade. The material is also used to surface the ceilings of the arcade and interior lobby.

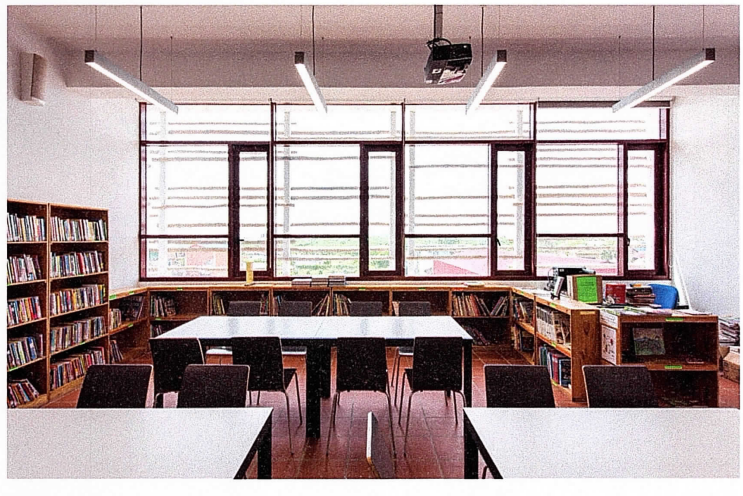
Another driver was the need to create a building that could be easily maintained, says Campbell, which led her team to minimize the need for mechanical ventilation, and to use local materials and construction methods. The rooftop includes a sports court and a teaching garden with native plants and veg-

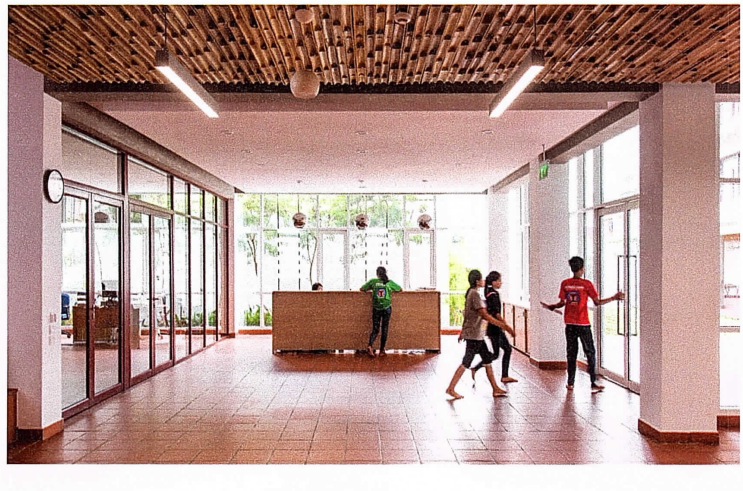


etables, which minimize solar heat gain and reduce stormwater runoff. A solar array provides a portion of the school's energy needs.

The client, the Cambodian Children's Fund (CCF), was founded by Scott Neesen in 2004 after visiting the same landfill that moved Cook. For Neesen, a Hollywood marketing executive at the time, a chance visit to the dump while on vacation led him to sell his Los Angeles house and furnishings, move to Phnom Penh, and found CCF. Since then, he has opened five other schools in Cambodia and created networks to help families manage debt, receive health care, develop job skills, and find housing. Originally, CCF's goal was to help the 45 children that Neesen first met at the landfill; today more than 2,200 kids are enrolled in its educational programs.

Named for both Neesen and Robert Cripps, former group chairman of Velcro Companies, which donated the building to CCF, the Neesen Cripps Academy was much needed to fill a gap in the web of support that the not-for-profit organization has stitched together over the past 13 years. Neesen takes pride in the fact that the "poorest children in Cambodia" will now be able to attend "the best school." ■





credits

ARCHITECT: COOKFOX Architects – Rick Cook, Pam Campbell, principals; Ciarán Conlon, Tyler Caine, Mark Canfield, Marguerite Lefevre, Giacomo Vischi, design team

ENGINEERS: Optima Consultants (m/e/p); iLi Consulting Engineers Mekong (structural, design); Arcadia (structural, construction)

GENERAL CONTRACTOR: Advance Construction and Design

CLIENT: Velcro Companies

OWNER: Cambodian Children's Fund

SIZE: 33,400 square feet

CONSTRUCTION COST: $4.7 million

COMPLETION DATE: February 2017

SOURCES

EXTERIOR CLADDING: Teasco (curtain wall, glazing, metal frame)

ELEVATOR: Schindler

PLUMBING FIXTURES: American Standard

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Tools for Schools

These pieces keep up with the changing learning environment.

By Kelly Beamon



Eli
This height-adjustable modular desk brings the standing desk into classrooms and other learning environments where activities and programming can vary and require flexibility. The button-activated sit-to-stand desk comes in five standard base colors, with eight shapes for the work surface, ranging from rectangular to trapezoidal to six-sided. Surfaces are laminate, whiteboard, or veneer, with the option of mounted dry-erase screens.
Izzyplus.com



Oodle
Smith System promotes "active" sitting with this stool that features three stacking and locking components to make the seat stationary or a balance ball of sorts, with 10 degrees of multidirectional wiggle. Molded from high-density polypropylene, the 17"-diameter units are offered in five colors, making them ideal for K–12 learning and recreational environments.
Smithsystem.com



Prospect Solo Space
This aluminum enclosure is offered in three configurations (two, three, and four panels) measuring 54" tall and 5' 6" in diameter, and is lined in sound-absorbing acoustic pads that can be used as tack boards. For schools and libraries, this unit offers an easily assembled semiprivate breakout space.
Hermanmiller.com



Recharge
Multiple benches (each 58" long, with space for two) can be positioned end-to-end or linked via seat-height connector tables in this seating by designer Chris Adamick. The furniture line features integrated three-prong USB ports that make them well suited to educational environments, from school libraries and transitional areas to universities.
Allsteeloffice.com



Skateboard Tile
Recycled skateboards are used to make these 7-ply maplewood tiles. They can be solid-mesh-mounted by the square foot and installed with standard mastic and sanded grout. This colorful tile wallcovering is ideal for learning centers or a library installation (shown)—a visual lesson in sustainability.
Artofboard.com

Americans Abroad

The U.S. diplomatic team in London will soon move across town to its new KieranTimberlake-designed home on the south bank of the Thames.

BY HUGH PEARMAN
PHOTOGRAPHY BY RICHARD BRYANT



ALMOST A DECADE after the U.S. Department of State ran a design competition to select an architect, the new American Embassy—or Chancery—in London by Philadelphia-based KieranTimberlake is set to open. The 12-story glass cube rises to 213 feet and wears a veil of sculptural smocking on three of its four sides. The cube, which contains more than 500,000 square feet of space, is set according to the cardinal points of the compass on a plinth partially buried in landscaped gardens. The plinth and the gardens—along with a large pond and various other artfully concealed obstructions—act as the building's physical security cordon.

Including the land, the cost of this strategically important new overseas outpost is $1 billion—or alternatively nothing, since that money was raised by the sale of other U.S. property in London. The prime asset is the soon-to-be-decommissioned embassy in Grosvenor Square, Mayfair, a part of town where land values are sky-high. The 1960 building designed by Eero Saarinen—complete with its imposing, centrally placed gilded-aluminum bald eagle by sculptor Theodore Roszak, with a wingspan of 35 feet—is destined to be converted into a luxury hotel designed by David Chipperfield.

The eagle of the new embassy is inside, part of an enormous relief version of the U.S. seal carved into the limestone wall of the tall, imposing entrance. It immediately imparts an air of solemn purpose. This is important to James Timberlake, KieranTimberlake partner, on a wider level. "This building has to be about dignity," he says. "It can't be a



goofy form." Hence, he says, the eternal geometric volume of the cube.

The new embassy is a mile and a half south of the UK government's Palace of Westminster and on the opposite bank of the Thames. It is the fulcrum of London's largest current regeneration area, Nine Elms, where an army of brashly upmarket riverside apartment towers and slabs is springing up around the nearby landmark of the long-disused 1930s Battersea Power Station. Some $20 billion of capital investment is taking shape here, and a new branch of London's subway system is being built to serve the emerging upscale neighborhood. The embassy will be the only architecturally sober building here, surrounded by a crowd of demonstrative drunks. Luckily it is saved from glassy blandness by its distinctive sunshading jacket and a mighty colonnade at the cube's base.

NEW DIGS The new embassy is a glass cube elevated on a colonnade and set atop a plinth. This base, and the not-yet-complete landscaping that will conceal it, contribute to the building's security.

Completion of the development surrounding the embassy is still a few years away, making it feel isolated, marooned in a muddy sea of construction sites. Its own gardens are not yet in place, although the building is otherwise finished. The facility has three separate entrances, expressed as steel-and-glass pavilions pulled away from the cube: a main entrance for officials, VIPs, and public events; one for people seeking passports, visas, and advice; and one for service and maintenance.

One aspect of the old Saarinen building in Mayfair has been adopted, consciously or otherwise: a high-ceilinged ground floor with showpiece



rooms. At Nine Elms, these include a gallery, a downstairs event space, separate lobbies for the main and consular entrances, and a grand glass staircase, all set behind the colonnade, atop the half-buried plinth. Farther up in the building, the office spaces, with interiors designed by Gensler, remain high-quality if neutral—predominantly white and gray—with a few too many metal acoustic ceilings and internal corridors. The public, however, gets a higher standard, with subtly sculptural plaster ceilings in the consular areas. The steel structure is hidden away rather than expressed.

The landscaping is not confined to the exterior. Six double-height conservatory-like gardens spiral up through the building, each with its own stair connecting two or even three floors and plantings based on a different U.S. climate zone. Three of these gardens are open to the air. High up on the northeast corner, the cube breaks open into a double-height loggia to create an enormous private terrace, for Ambassador Robert Wood Johnson and those who will succeed him, looking directly across to Westminster. These intrusions into the cube's otherwise pure geometry work well.





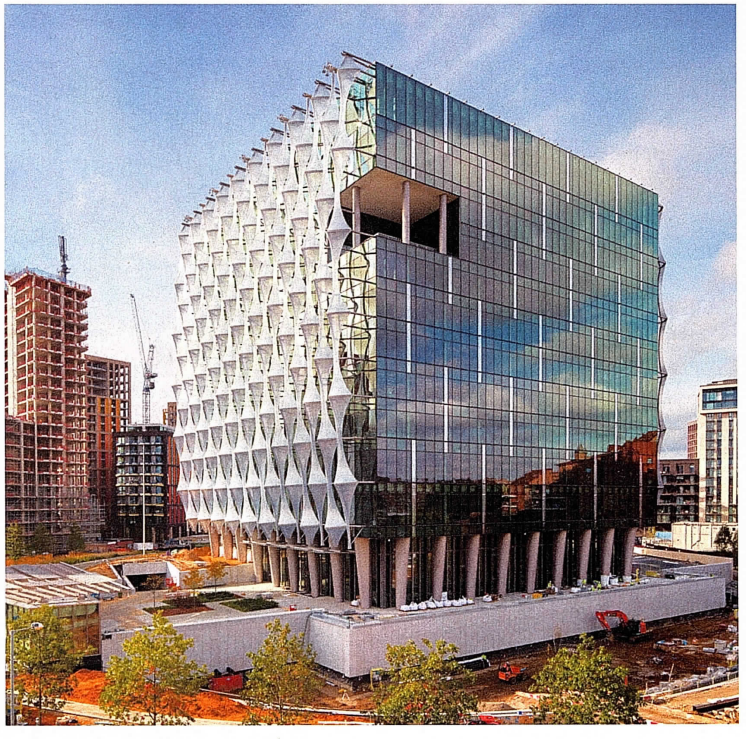
SERIOUS BUSINESS In the embassy's lobby, an outsize seal of the United States is set into a limestone wall (opposite). The consular spaces feature sculpted plaster ceilings (above) and booths (right) for consultations with staff.

All this has been designed from the outset to be as environmentally friendly as possible, targeting LEED Platinum and its UK equivalent, BREEAM Outstanding. To achieve these goals, the building is enclosed in a triple-glazed curtain wall with the hourglass-shaped sunshades cloaking all of the facades except the north. These are made of single-skin, fritted translucent ETFE film and are set several feet in front of the curtain wall on beefy tubular steel outriggers. (A star-patterned frit is included on the glass to deter bird strikes.) Ground-source heat pumps, a rooftop photovoltaic array, chilled beams, and a heat-recovery system provide additional energy savings. Rainwater is captured and stored for toilet flushing and landscape irrigation.

Timberlake describes the building as "both evocative and performative, helping to define a new environment for diplomacy while mapping a passage towards a diplomacy for the environment." Neat words for a neat, carefully considered object. Inside however, with the exception of the consular spaces, the embassy inevitably feels more like a conventional corporate headquarters.

About 800 staff members will begin to move in later this month. A dedication ceremony, with President Trump in attendance, will take place on an as yet unspecified date, probably in February. It will be his





OUTSIDE IN At the northeast corner, the cube breaks open to allow for a double-height terrace for the ambassador (left). The building also incudes six conservatory-like gardens (above), each with a planting scheme based on a different U.S. climate zone.

controversial first visit, and protests are inevitable. But the building will sail on, probably continuing to appear aloof. However, as its new landscape matures and the surrounding development area is built out, the project's main urbanistic achievement should become apparent: to blend maximum security with the Anglo-American tradition of mansions set in gardens. ■

Hugh Pearman is a London-based architecture critic and the editor of the RIBA Journal.

credits

ARCHITECT: KieranTimberlake

INTERIOR WORKPLACE DESIGNER: Gensler

CONSULTANTS: Thornton Tomasetti (structure, physical security); Arup (m/e/p, facade, sustainability); OLIN (landscape); AECOM (cost estimating); Sako & Associates (technical security)

U.S. LEAD CONTRACTOR: BL Harbert International

U.K. LEAD CONTRACTOR: Sir Robert McAlpine

OWNER: U.S. Department of State, Bureau of Overseas Building Operations

SIZE: 520,000 square feet

COST: $1 billion

OCCUPATION: January 2018

Clutter just got schooled.

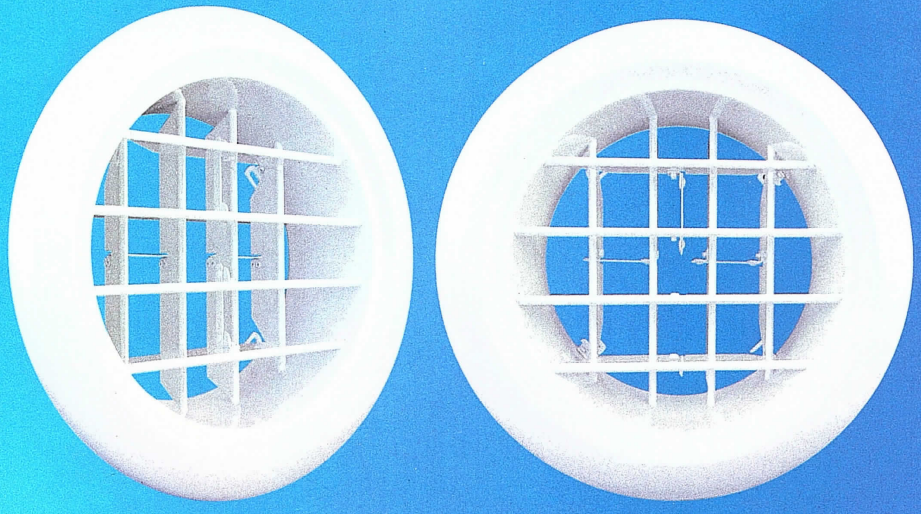
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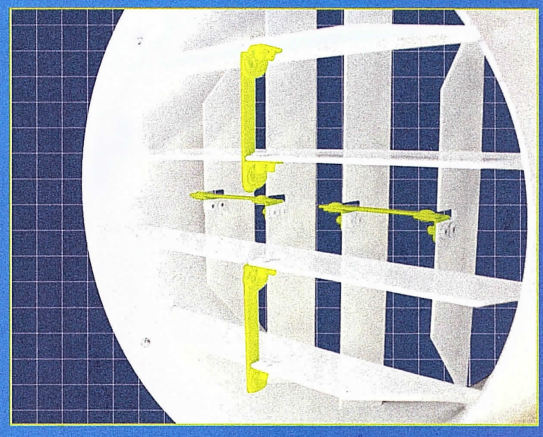
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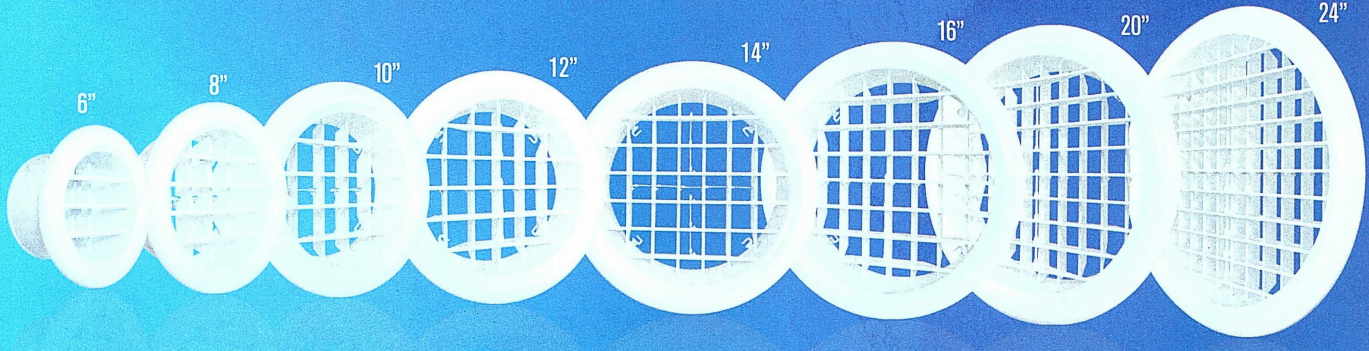




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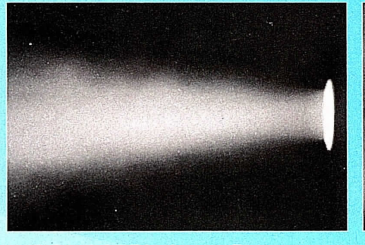
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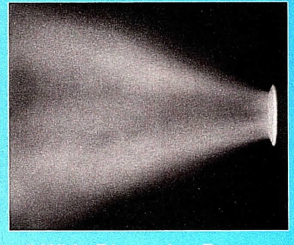
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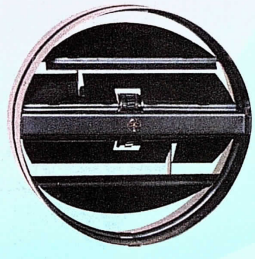
Straight Discharge Pattern



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Building Blocks

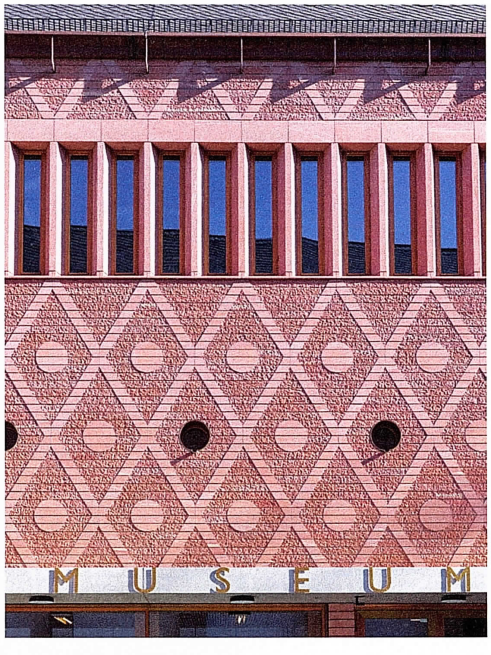
Steel girders and timber beams can be enormous, concrete pours can be amorphous, glass diaphanous. What makes masonry stand out is simply the way it stacks up. It has weight, substance, texture, and color, brought together through a sleight of hand in the craft of laying brick or stone. Three buildings—in Frankfurt, Marrakech, and Louisville—reveal that a reverence toward this traditional material and method still thrives.

HISTORICAL MUSEUM, FRANKFURT, LEDERER RAGNARSDÓTTIR OEI



Historical Museum | Frankfurt | Lederer Ragnarsdóttir Oei

A Link to the Past



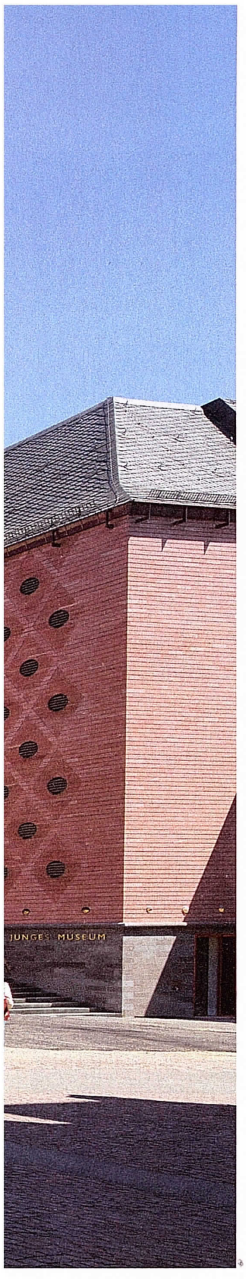
A contemporary museum addition, sympathetic to its neighbors, replaces a postwar concrete building.

BY MARY PEPCHINSKI

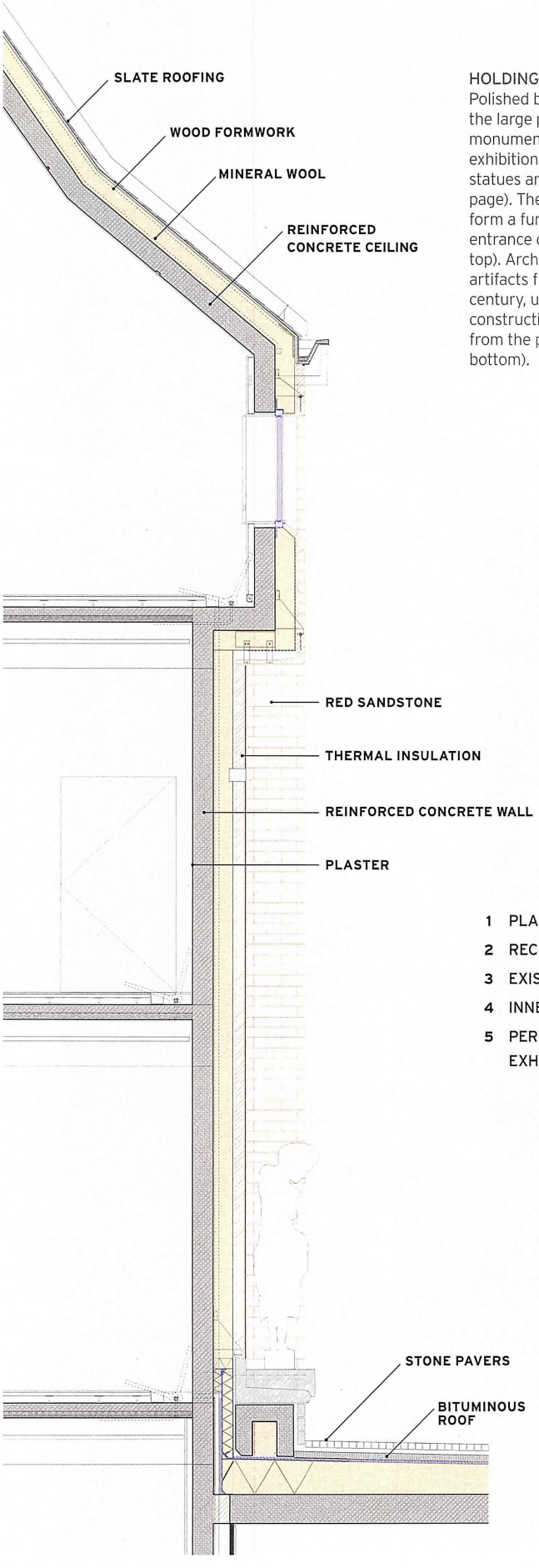
PHOTOGRAPHY BY ROLAND HALBE

With rose-hued Neckertäler sandstone on the facade and gray slate tiles cladding the high-pitched roofs, the extension to the Historical Museum Frankfurt feels as if it has been around for decades, although it just opened in October. Designed by Stuttgart-based architects Lederer Ragnarsdóttir Oei, for a prominent inner-city site—wedged between the Saalhof, a complex dating from the 13th to 19th centuries that houses the original museum, on the south, and the Medieval Saint Nicholas Church and Frankfurt's old city square, the Römer, on the north—the regional materials and local references are explicit. It was imperative that the new building, which replaces a sprawling concrete addition from the 1970s, forge an emotional bond with a public that had grown weary of such big, postwar projects. "Frankfurt suffered greatly during postwar reconstruction," says Arno Lederer. "There was a euphoria among architects and planners [about modern building] from the end of the war to the 1970s, but this kind of architecture was not popularly accepted."

When the architects entered a limited competition a decade ago, they began by looking at the area's prewar urban plan. Taking a cue from a narrow street that had once crossed the

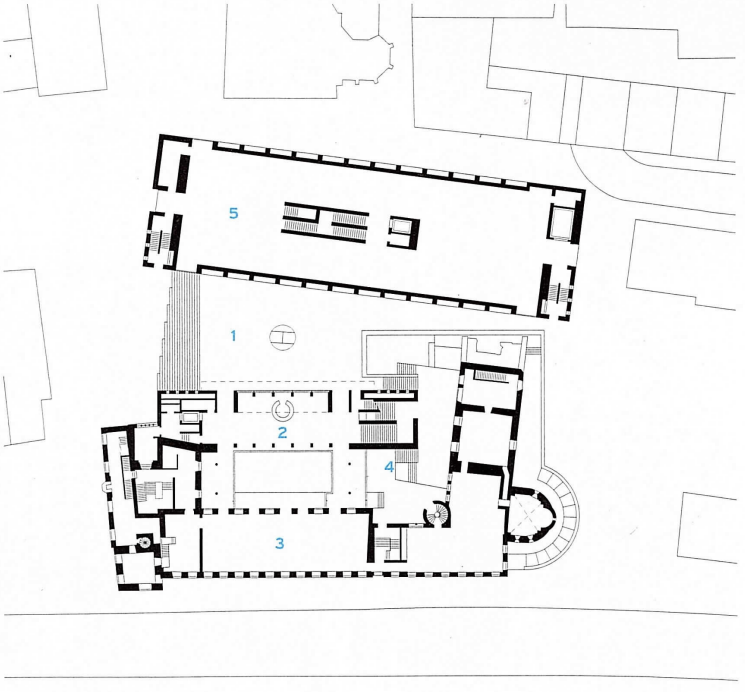


IN CONTEXT
Stone panels, turned slightly ajar, like a field of window shutters, illuminate interior stairwells on the shorter eastern and western sides of the freestanding exhibition building (above). Its steeply pitched roof mimicks those of the traditional neighbors (this page). The surface of the office wing, integrated into the existing Saalhof complex, is inscribed with a diamond pattern, and circular forms at the center of each diamond are either left flat or accommodate air vents (opposite, bottom).



HOLDING COURT
Polished brass sheathes the large periscope; monumental niches on the exhibition building display statues and spolia (this page). The new structures form a funnel-shaped entrance court (opposite, top). Archeological artifacts from the 12th century, unearthed during construction, are visible from the plaza (opposite, bottom).





GROUND-FLOOR PLAN

0 80 FT. 25 M.

site, they distributed the 108,000 square feet of program into two long structures—a freestanding exhibition building to the north and a wing for the entrance and offices integrated into the Saalhof to the south—leaving a funnel-shaped through-block entrance court in between. An underground foyer connects the two structures.

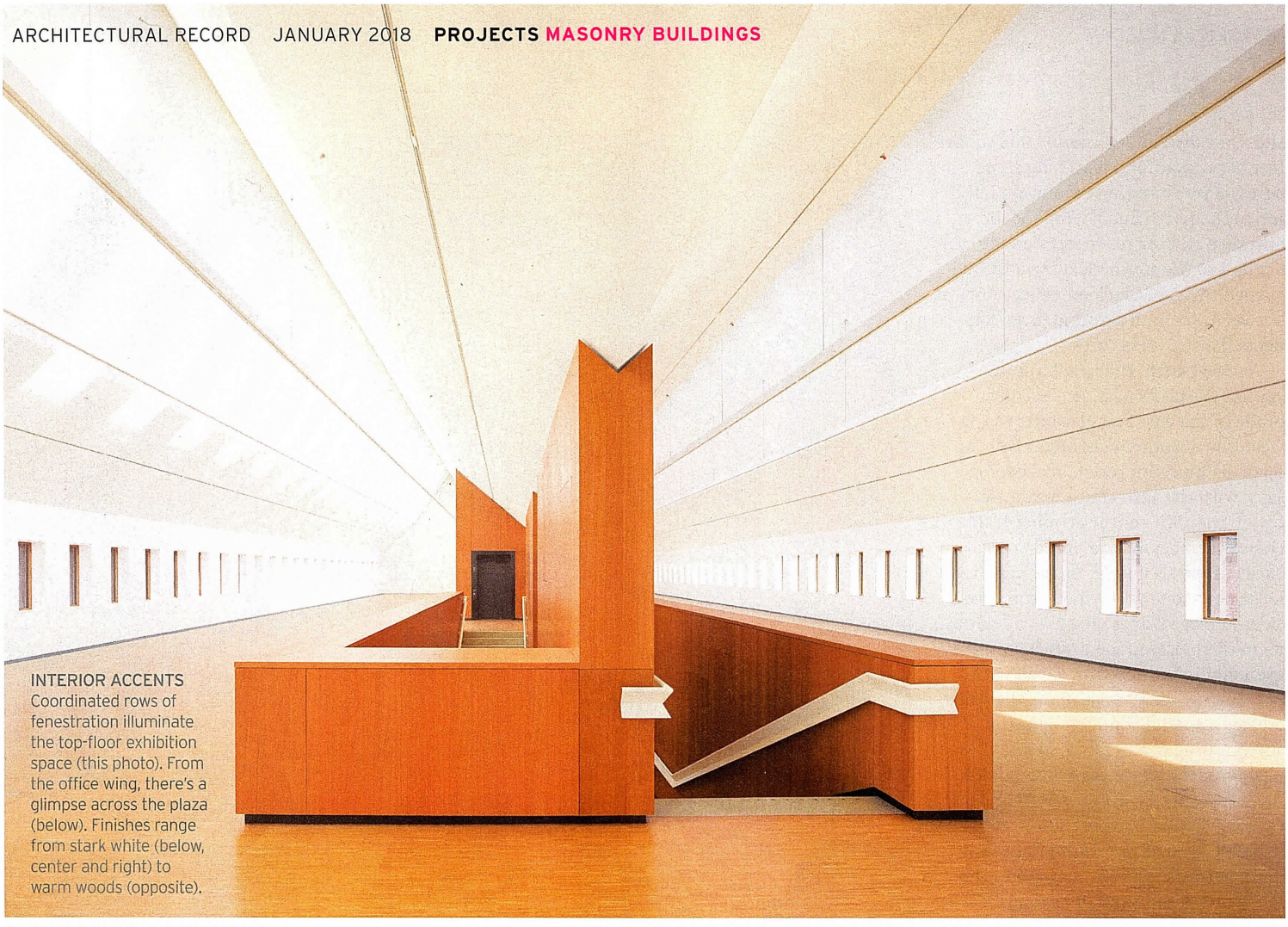
At every turn, the new building reveals the city's past. Accessed on grade to the east and via stairs to the west, the entrance court feels like "an open-air museum room," as Lederer says, with the 12th-century Stauffer tower, the 15th-century timber-frame House Wertheym, and archeological excavations all visible. At the center, a large periscope with views from two sides allows visitors glimpses of exhibits in the below-grade foyer before they even enter the museum. Paved with a purple-gray basalt lava stone, the court creates a spatial connection to the surrounding urban fabric, while the new facades engage the context with inventive surface articulations and carefully situated fenestration. For example, a band of ground-floor windows permits not only views into the lobby but to the Saalhof beyond.

The choice of materials and their application are also sympathetic to Frankfurt's historic architecture. The rear-ventilated sandstone facade is in fact "laid brickwork with a large-format stone," says project manager Daniel Steinhübl. It is supported by steel brackets and attached to the building's reinforced steel structure. The colored mortar used for the deeply recessed horizontal and thin vertical joints matches the sandstone. The surface is inscribed with a diamond pattern consisting of smooth and pointed areas, and circular forms at the center of each diamond are either left flat or accommodate air vents. These articulations create the impression of a light enclosure, like the diagonal timber framing on House Wertheym, or "a pattern on a carpet," says Jórunn Ragnarsdóttir.

The facades of the exhibition building have the same construction, without the diamond pattern. Monumental niches, surfaced in rough-finished, ivory plaster, display sculptures and spolia over the length of the long sides. The westernmost niche on each facade is glazed to allow views from the galleries to the city. Small stone panels, turned slightly



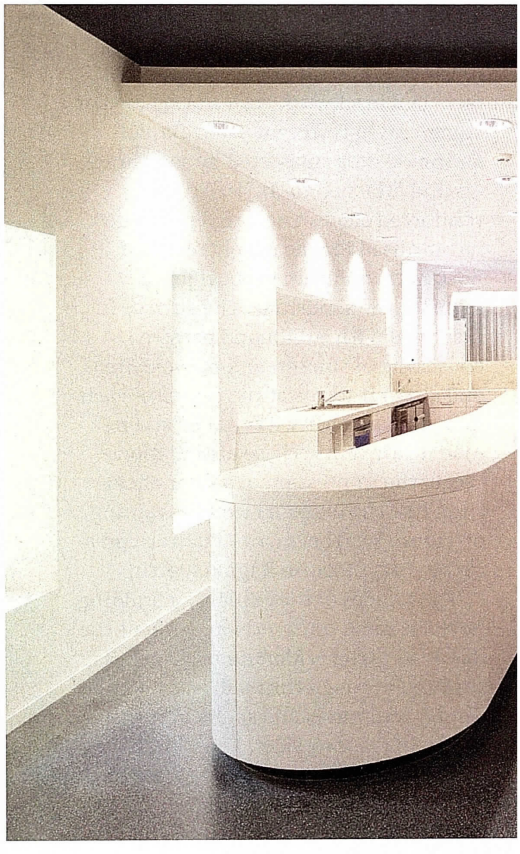




INTERIOR ACCENTS
Coordinated rows of fenestration illuminate the top-floor exhibition space (this photo). From the office wing, there's a glimpse across the plaza (below). Finishes range from stark white (below, center and right) to warm woods (opposite).







ajar, like a field of window shutters, form openings that illuminate the stairwells on the shorter eastern and western sides.

Warm-toned metal details—copper for the roof gutters and drains, bronzed tombac sheet metal for the projecting window atop the exhibition building, architectural bronze for the openings on the entrance building, and polished brass sheathing on the double periscope—create visual linkages between the two structures.

Today the long-awaited Historical Museum extension—whose construction was prolonged due to demolition of the earlier building, the discovery of unexpected archeological artifacts, and complicated foundation work—feels both dignified and inextricably rooted in its context. "It is connected to the city," says Lederer, "not as a reconstruction but an improvement." ■

credits

ARCHITECT: LRO Lederer Ragnarsdóttir Oei

ENGINEERS: Lenz Weber Ingenieure (structural); Werner Sobek Frankfurt

CONSULTANTS: Halfkann + Kirchner (fire protection); ISK Ingenieursgesellschaft (geotechnics)

CLIENT: Stadt Frankfurt am Main Dezernat VII

SIZE: 109,000 square feet

COST: $64 million

COMPLETION DATE: October 2017





Musée Yves Saint Laurent | Marrakech, Morocco | Studio KO

Haute Facade

A museum for a fashion icon is impeccably dressed in brick.

BY ANDREW AYERS

PHOTOGRAPHY BY NICOLAS MATHÉUS

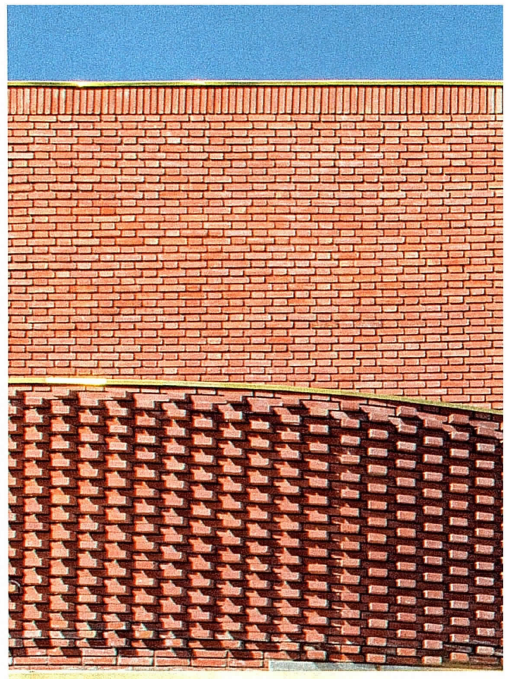
Commissioned by Pierre Bergé, Yves Saint Laurent's longtime life and business partner—who died just a month before its opening in October—the Musée Yves Saint Laurent in Morocco pays homage to the work of the legendary couturier. Located a stone's throw from the Villa Majorelle, the couple's Marrakech home, it occupies a cramped site in a zone where planning regulations restrict building height to just two stories. The architects, Studio KO (Karl Fournier and Olivier Marty), had no choice but to fill the plot up to its perimeter. The facade is almost entirely blind. This is because, on the one hand, the principal internal spaces—galleries for both the permanent and temporary exhibitions, a quarantine room for incoming objects, basement reserves, and a small auditorium for both concerts and lectures—require the exclusion of daylight, and, on the other, because Studio KO chose to echo the traditional North African house, which, hiding from the street, is organized around internal patios.

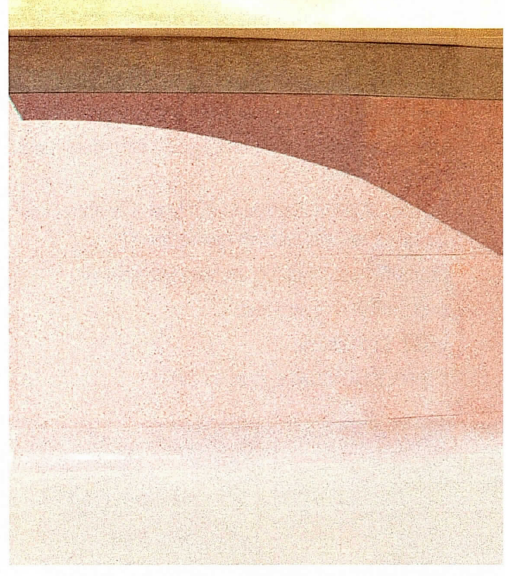
So the question arose of how to articulate the perimeter envelope. "The last thing Pierre wanted was an architectural 'icon,' but rather a building that was of its time and place," recalls Fournier. "There are two main materials that dress the museum's facade: brick and terrazzo. Both are produced locally by Moroccan craftsmen. We wanted materials that were handsome and hard-wearing but that weren't ostentatious—unlike many of the rather showy glass buildings that are currently going up in Marrakech, which not only ignore tradition but also common sense in a city where summer temperatures can exceed 120 degrees Fahrenheit. We also liked the idea of a contrast between 'poor' materials on the outside and the richness of the haute couture within."

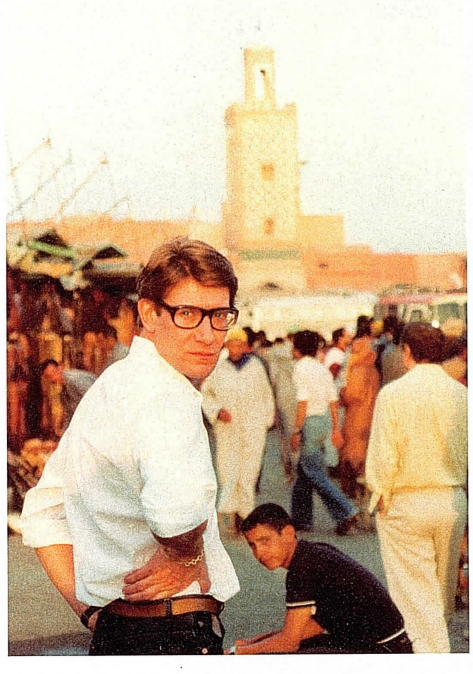
The museum's perimeter walls take the form of a three-layer sandwich: the first layer comprises both concrete panels cast in situ and a column-and-beam concrete structure with industrial-brick infill; then comes a layer of mineral-wool insulation; and finally the outer skin, whose lower part is terrazzo (rising 7½ feet above grade) and whose upper part is specially made red terra-cotta brick. "We wanted the building to appear as though lifted off the ground," says Fournier, "which is what prompted the use of terrazzo. Both the sidewalk and the lower part of the facade are in the same material. The joint where they meet is curved, like a cape draped on the floor." Made from an aggregate comprising marble gravel with cement and pigment mortar, the $1\frac{3}{16}$-inch-thick terrazzo was poured in place on the sidewalk but prefabricated for the joint and the wall cladding, so as to ensure the required precision. Easy to clean and rework in the event of graffiti, the terrazzo base also puts the delicate brickwork of the facade's upper part out of reach.

The hand-laid clay bricks—which were fired in the northern Moroccan town of Tétouan in various sizes to allow complex corner joints—are arranged in three-dimensional geometric patterns that were hand-drawn by the architects, some pure invention, others inspired by historic buildings, including a minaret in Iran. Life-size mock-ups were created to test the patterns, which catch light in different ways according to the time of day. Capping the facade is a strip of brass—unlacquered, so that it will dull and patinate with time—while just above the terrazzo is a string course in bush-hammered raw concrete which, integrated into the column-and-beam structure, carries the bricks above. "We'd done tryouts and weren't convinced by having the brick sit directly on the terrazzo," recalls Fournier. "We also wanted to express the reality of the construction, but we weren't sure what surface treatment to give the concrete string course. We'd tried a wood-plank finish, but the results were too uneven. Quite by chance, Olivier happened upon workmen on-site who were chiseling away at a newly cast concrete wall. We realized that revealing the aggregate would be the perfect finish for this Brutalist belt that encircles the entire building. Pierre loved it and said it reminded him of Marcel Breuer's New York Whitney building." ■

Andrew Ayers is a Paris-based writer, researcher, translator, and educator.

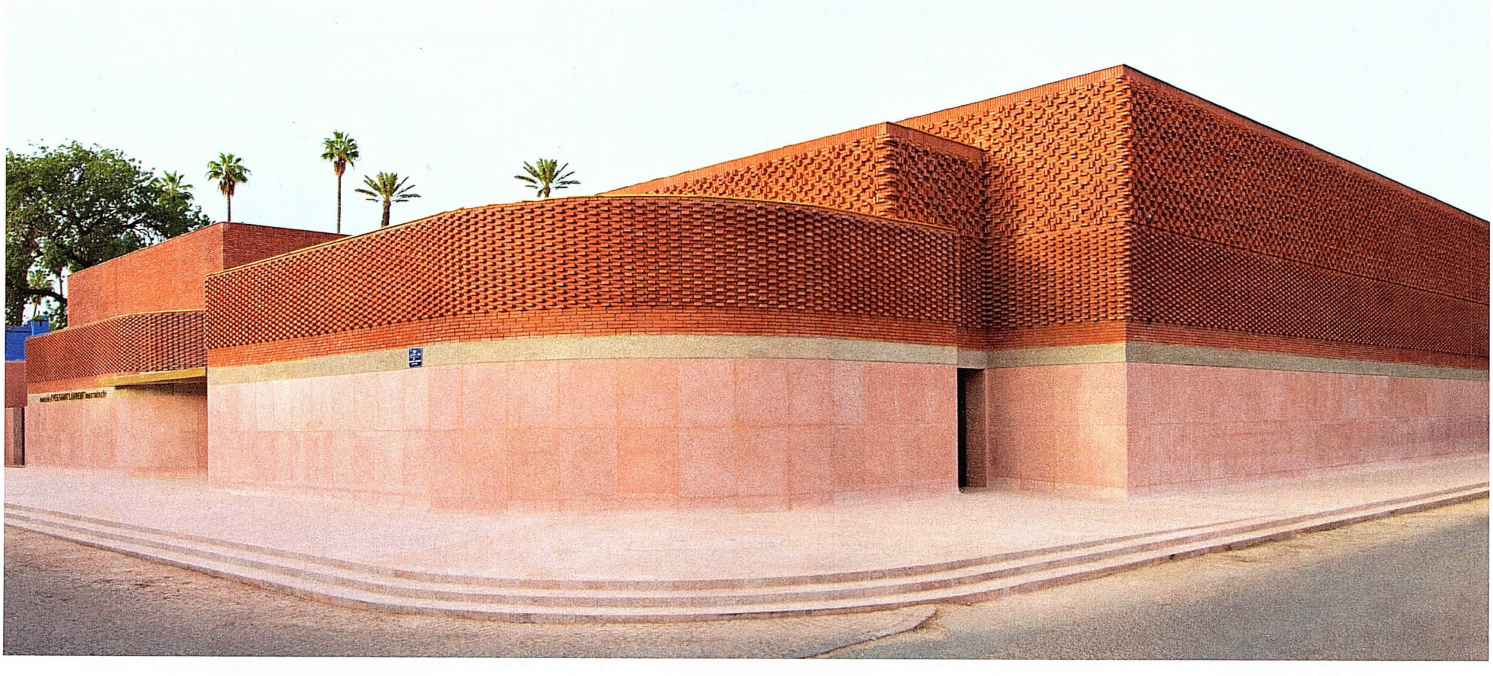




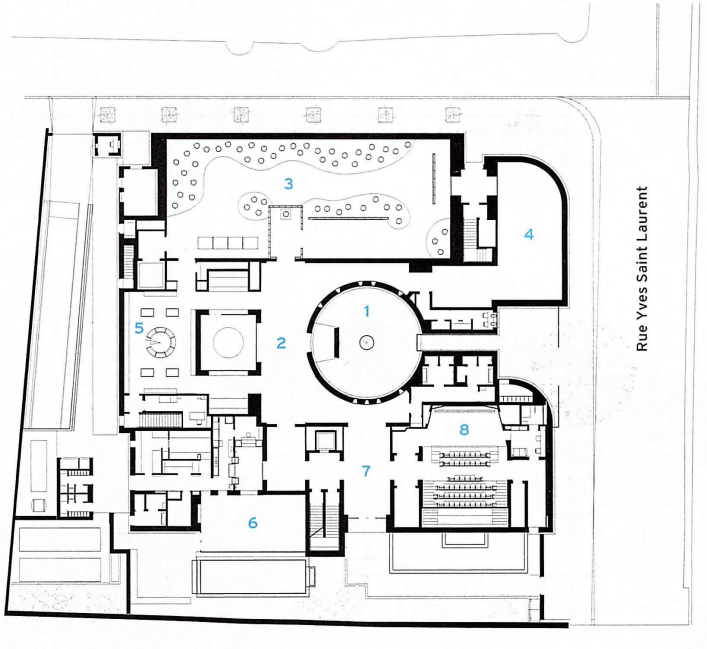




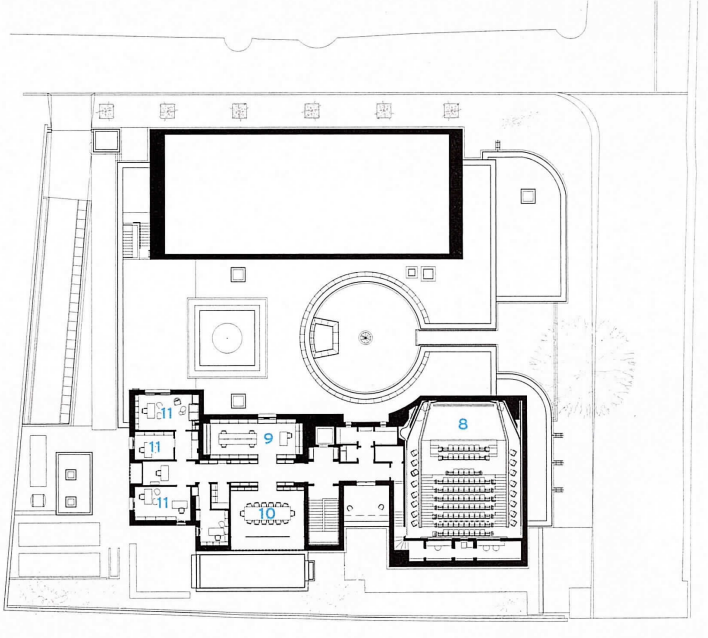
PRETTY IN PINK The two-story building features highly articulated brick walls over a terrazzo base (this photo and below). Yves Saint Laurent in Marrakech's medina quarter (opposite, bottom).







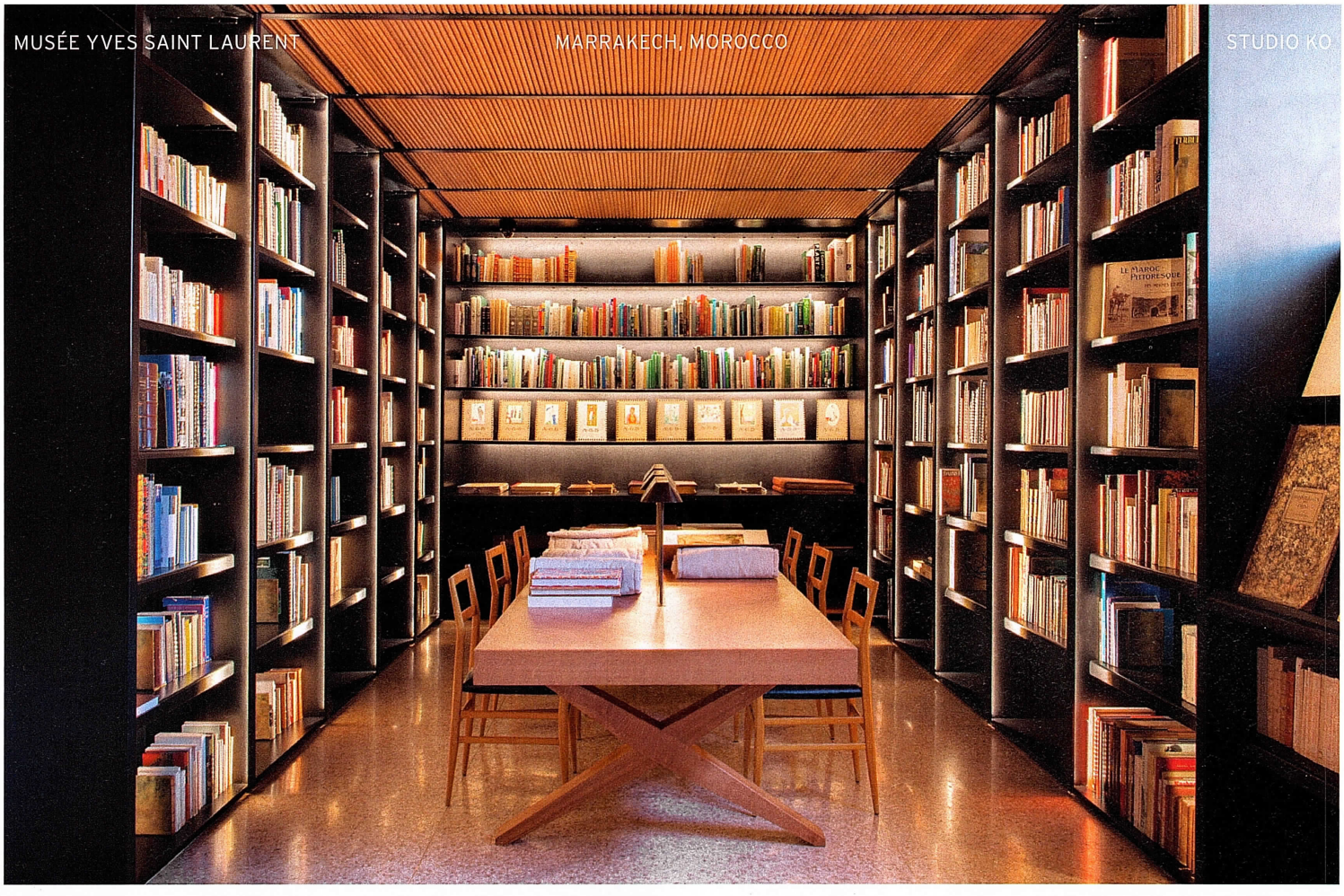
GROUND-FLOOR PLAN

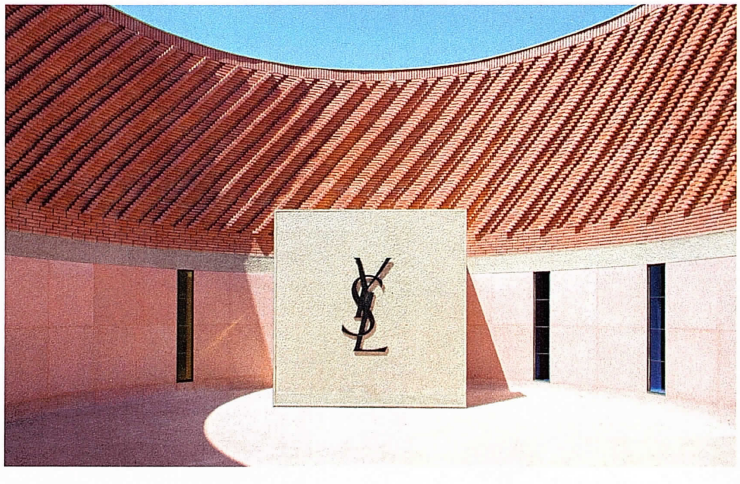


SECOND-FLOOR PLAN

0 30 FT.
10 M.

1 ENTRANCE PATIO
2 GREAT HALL
3 PERMANENT EXHIBITION
4 TEMPORARY EXHIBITION
5 MUSEUM SHOP
6 CAFÉ
7 FOYER
8 AUDITORIUM
9 LIBRARY
10 CONFERENCE ROOM
11 OFFICE







ON DISPLAY An exhibition highlights the work of French painter Jacques Majorelle in Morocco (opposite). A research library is located on the second level (top). The brick pattern of the front facade is carried over to the back, where there is a terrace for the café (right). The circular entrance patio features a diagonal pattern (above).

credits

ARCHITECT: Studio KO – Karl Fournier, Olivier Marty, founding partners; Fayçal Tiaïba, project manager

ARCHITECT OF RECORD: Claire Patteet

ENGINEER: Bymaro (structural, civil, mechanical)

GENERAL CONTRACTOR: Bymaro

CLIENT: Fondation Jardin Majorelle

SIZE: 43,000 square feet

COST: $16 million

COMPLETION DATE: July 2017

SOURCES

DOORS: Mogs

GLAZING: Saint-Gobain

ACOUSTIC PANELS: Topakustik

Owsley Brown II History Center | Louisville | de Leon & Primmer Architecture Workshop

A Fresh Take on Tradition

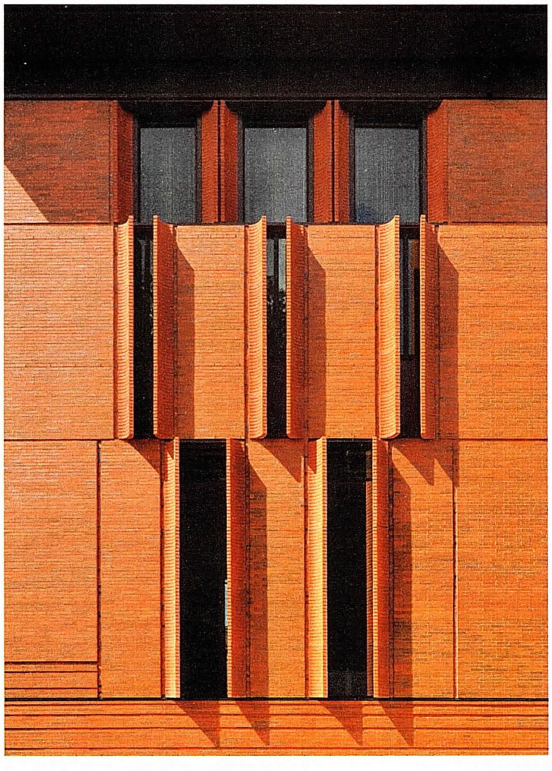
A venerable institution expands in a historic neighborhood.

BY JOANN GONCHAR, AIA

PHOTOGRAPHY BY DE LEON & PRIMMER

You might expect the architects for a new building dedicated to the history of the region surrounding Louisville to try and fit the design into its surrounding context. After all, the client, the Filson Historical Society, is almost 125 years old, and the site is in a landmarked district full of well-kept Victorian houses. But the recently completed expansion, the Owsley Brown II History Center, by de Leon & Primmer Architecture Workshop, is clearly of this century: the 30,000-square-foot, five-story structure in Old Louisville has a flat, plinthlike roof and a taut veneer-brick skin with vertical sculptural fins that seem to peel back the cladding to reveal generous expanses of glass. It is decidedly not what M. Ross Primmer and Roberto de Leon, coprincipals of the Louisville-based firm, refer to derisively as "Ye Olde."

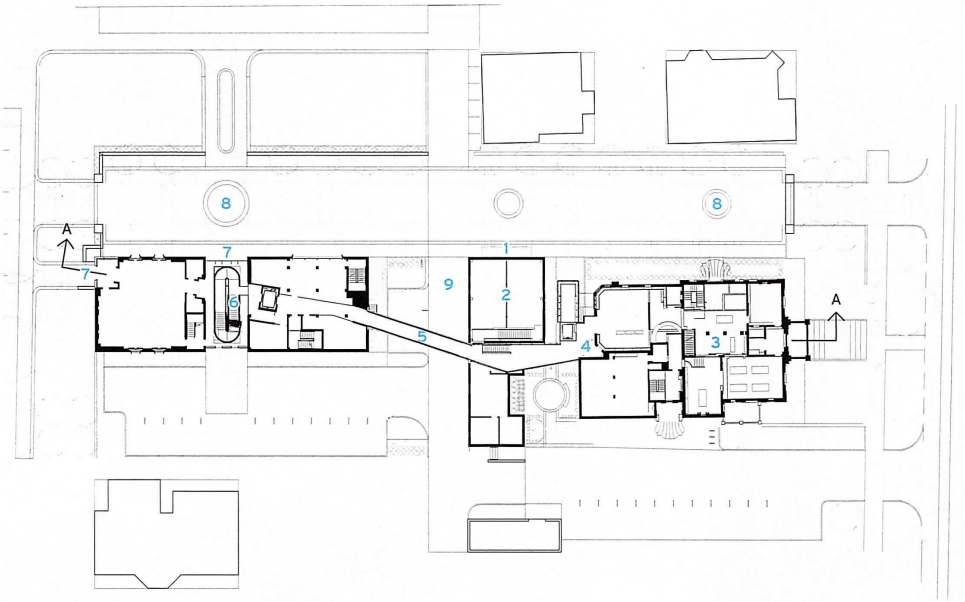
The architects have designed a handsome contemporary structure for the center—named after a late local philanthropist and Filson board member—and have skillfully inserted it into its complicated setting. Even casual observers should be able to detect the underlying logic, rooted in close observation of the site. The most obvious manifestation is the choice of brick, the dominant material of the neighborhood. A more subtle reference to the context is the building's proportions: its tall and narrow street-facing elevation is of similar dimensions to the fronts of the adjacent houses and echoes their facade



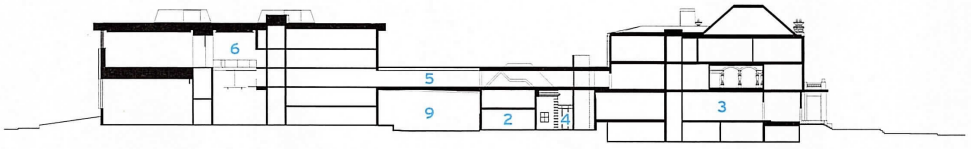


BRICK BY BRICK The History Center (above and right) is clad in Norman bricks, which are long and thin. Precast concrete vertical fins at the windows give the impression that the masonry skin is peeling back.



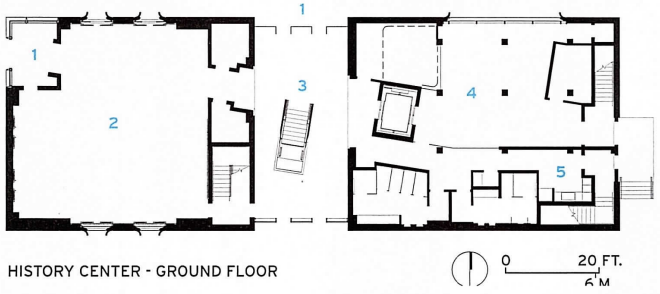


CAMPUS PLAN – WALKWAY LEVEL

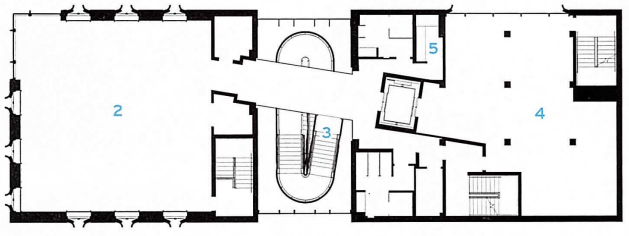


SECTION A - A

1 MAIN ENTRANCE
2 CARRIAGE HOUSE
3 FERGUSON MANSION
4 ATRIUM
5 PEDWAY
6 HISTORY CENTER
7 EVENT ENTRY
8 PLAZA
9 ALLEY



HISTORY CENTER - GROUND FLOOR



HISTORY CENTER - FOURTH FLOOR

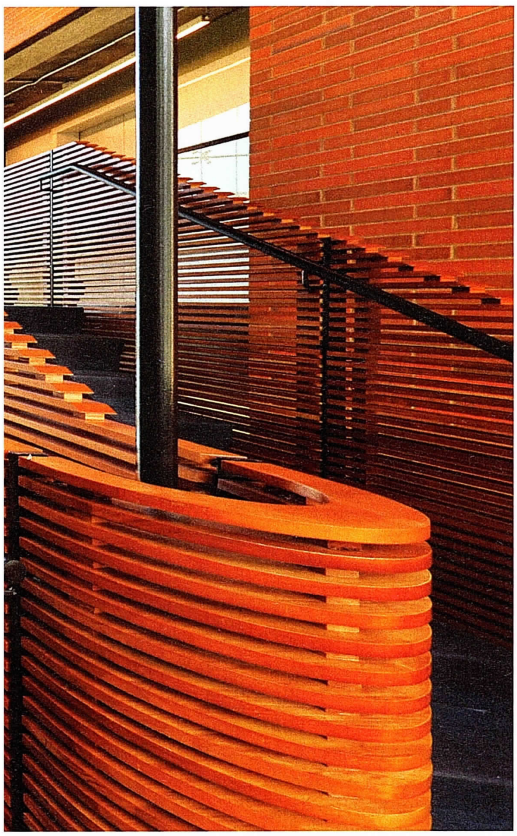
1 EVENT ENTRY
2 EVENT ROOM
3 STAIR HALL
4 ARCHIVES
5 CATERING



rhythm, in which one third of each housefront is distinct from the rest. The architects discovered that these proportions are consistent throughout the district by documenting nine square blocks around the site—one piece of their extensive analysis of the neighborhood and its history.

De Leon & Primmer, ARCHITECTURAL RECORD Design Vanguard winners (RECORD, December 2010, page 76), relied on such a reinterpretation of historical and vernacular architecture in previous projects, including a visitor center for Wild Turkey Bourbon in Lawrenceberg, Kentucky (RECORD, June 2014, page 224). The building melds forms typical of the region's agricultural buildings with clean-edged modernism. Here at the Filson, the architects' strategy of combining investigation and invention won over the board and the neighbors, as well as the landmarks commission, which was eager to avoid creating a false sense of history, according to Primmer.

The new building, which provides much needed archive space for the organization's extensive collection of manuscripts, photographs, and artwork, among other materials, as well as a home for lectures, exhibitions, and receptions, completes a small campus. Besides the History Center, the Filson includes a 1905 Beaux-Arts mansion and carriage house (the buildings have been the institution's home since the mid 1980s; both were renovated as





SOCIAL CLIMBER The History Center's stair hall (above and right) has been designed as an inviting social space. Its suspended steel structure is wrapped in stained poplar slats, CNC-cut and arranged to create a sculptural form based on a traditional balustrade.

part of this $13.8 million project), and a new 115-foot-long elevated, enclosed walkway. It spans an alley and connects the three structures, allowing staff to move research materials through the complex without exposing them to the elements. The new facility and a capacious plaza replace parking lots that were created by tearing down houses, before the neighborhood earned its protected status in 1974.

Within its rectangular footprint, the History Center contains the archives on five floors at its eastern end, along with two stacked rooms for events, each with the capacity for 220 people, at its western end. In between these two zones, and extending the structure's full 42-foot height, is a grand stair hall, glazed on two sides. The program areas have distinct characters. The archives look quasi-industrial, with the concrete structure and the utilities exposed. Although they have a back-of-house feel, passageways that are accessible to both staff and visitors extend into these storage areas, offering glimpses of the Filson's treasures through glass partitions (the collection is also visible from the exterior because of a five-story-tall, north-facing, UV-

credits

ARCHITECT: de Leon & Primmer Architecture Workshop – Roberto C. de Leon, Jr., M. Ross Primmer, coprincipals in charge; David Mayo, Michael Gastineau, project managers

CONSULTANTS: MKSK (civil, landscape); Tetra Tech (structural); Shrout Tate Wilson (m/e/p)

GENERAL CONTRACTOR: Wehr Realm Construction Services

CLIENT: Filson Historical Society

SIZE: 30,000 square feet

COST: $13.8 million

COMPLETION DATE: March 2017

SOURCES

BRICK: Sioux City Brick

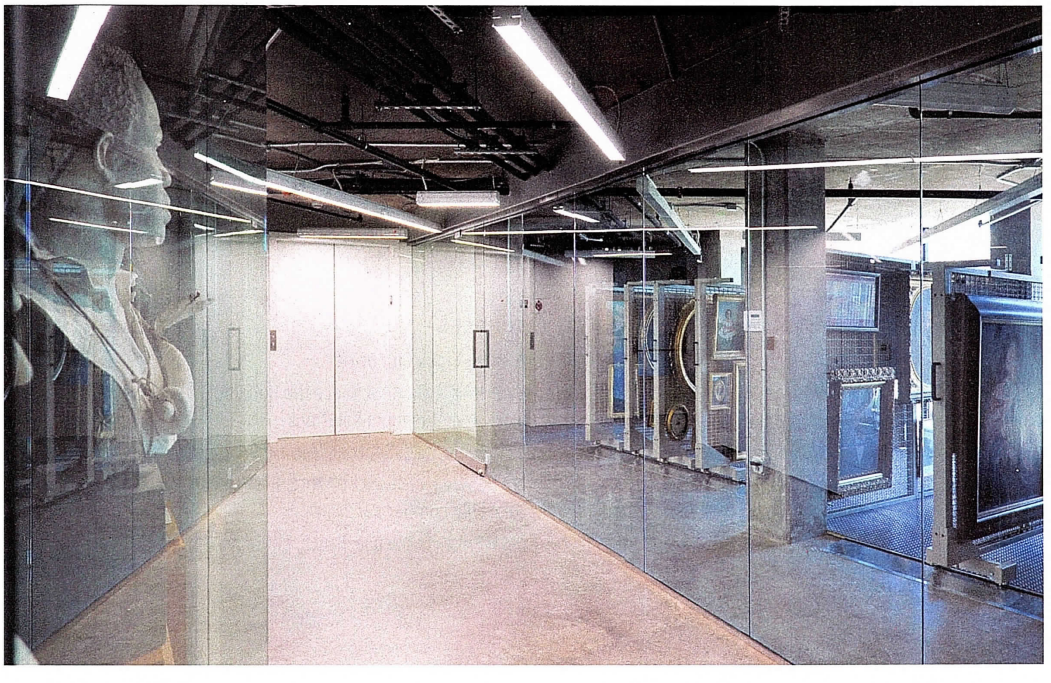
EXTERIOR GLASS: Oldcastle BuildingEnvelope, Trulite Glass and Aluminum Solutions

STAIR FRAME: Sentry Steel

WALL AND CEILING PANELS, STAIR CLADDING: Louisville Lumber and Millwork

LIGHTING: EcoSense, Bruck, Lithonia Lighting





RIGHT OF PASSAGE Extending through the archives (bottom) are passageways accessible to visitors and staff, offering views of the Filson's treasures. As with the main stair, the event rooms feature poplar slats. The ceiling of the upper room (left) incorporates Lucite strips, whose unpolished edges subtly glow with reflected light.

protected glass curtain wall).

The architects gave the stair hall and function rooms an entirely different tone, one more akin to the elaborate interiors of the neighboring houses and to those of the Filson's own mansion, which include Tiffany light fixtures, elaborately carved oak-paneled walls, coffered ceilings, and mosaic-tiled hearths. But the new interiors don't replicate any of these elements. Instead, they imaginatively reinterpret them, relying on less exotic and more contemporary materials, as well as new construction methods.

The event rooms, for instance, feature wall panels of CNC-cut poplar slats stained a rich brown. The ceilings have similarly fabricated screens that conceal acoustical material and mechanical systems. In addition to the poplar slats, they incorporate strips of Lucite. These are almost undetectable, except for their unpolished edges, which subtly glow with reflected light. The idea, says de Leon, was to provide a sense of craft and intricacy, but still make it easy to build.

The stair, supported by a steel structure suspended from above, is wrapped, like the walls and ceilings of the two halls, in poplar slats. Here they have been cut and arranged to create a sculptural, extruded form based on the profile of a traditional stair balustrade. The strategy produces something that is more than a means of vertical circulation: any visitor should find it an inviting social space, enhanced by the warmth and grain of the precisely cut wood. One can easily imagine the stair landings populated by guests at a fundraising gala, engaged in conversation.

Since completing the History Center, the Filson has seen an uptick in donations, both of artifacts and of funds. Many of the gifts, including a set of U.S.-presidential autographs and a grant establishing a Jewish community archives, are from individuals with no prior connection to the organization. Craig Buthod, the Filson's CEO and president, attributes this activity to the new building. "Previously, we just had a mansion," which, as far as passersby were concerned, could have housed anything, "even a dental office," says Buthod. And he credits the way de Leon & Primmer's thoughtful design is integrated into its surroundings, yet is still clearly of the present day, with this new visibility and confidence. "People just have a better idea of what the Filson does." ■

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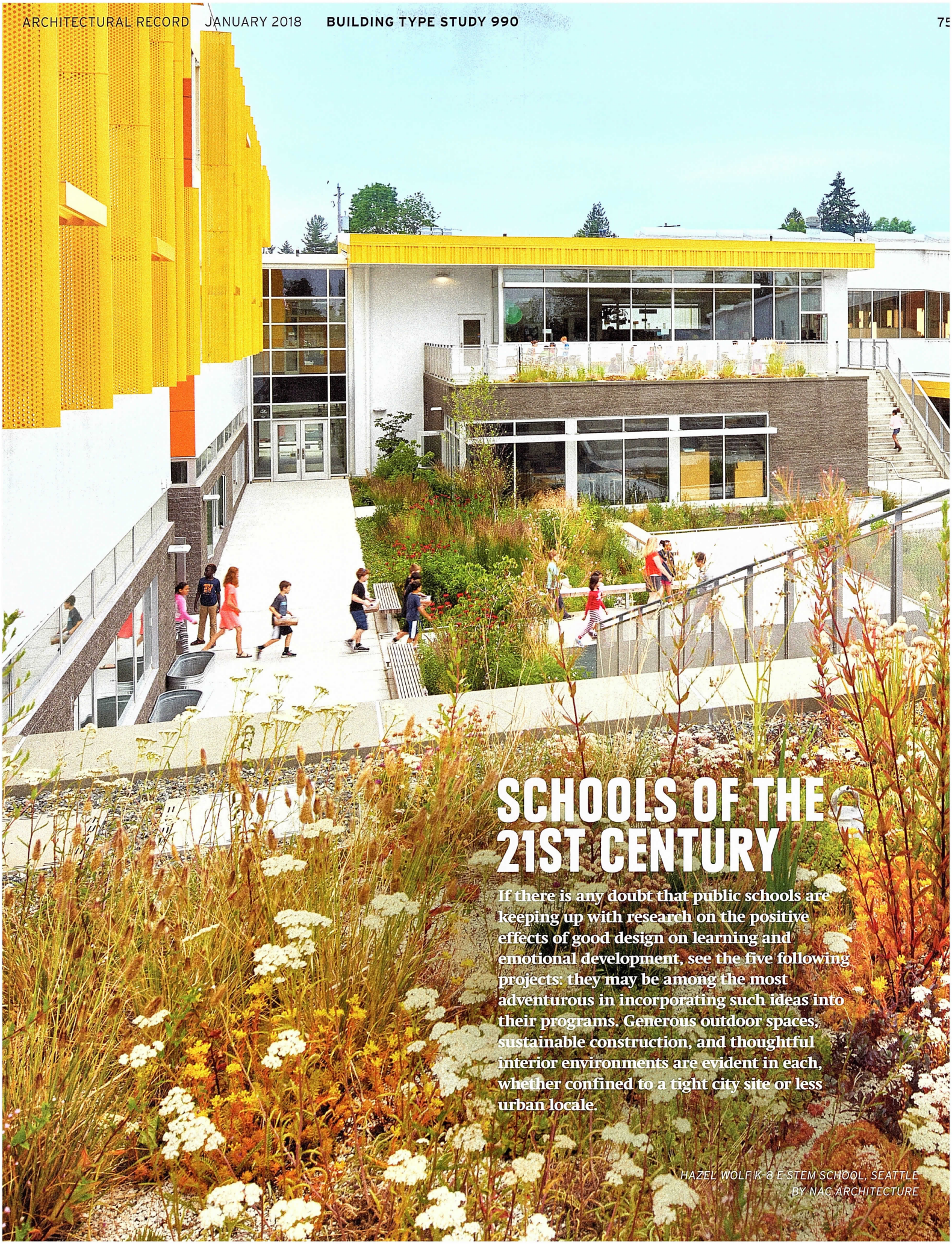
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SCHOOLS OF THE 21ST CENTURY

If there is any doubt that public schools are keeping up with research on the positive effects of good design on learning and emotional development, see the five following projects: they may be among the most adventurous in incorporating such ideas into their programs. Generous outdoor spaces, sustainable construction, and thoughtful interior environments are evident in each, whether confined to a tight city site or less urban locale.

HAZEL WOLF K-8 E-STEM SCHOOL, SEATTLE
BY NAC ARCHITECTURE

Hazel Wolf K-8 E-STEM School | Seattle | NAC Architecture

Learning Environment

A school with a green curriculum makes the most of a tight urban site.

BY SARAH AMELAR

PHOTOGRAPHY BY BENJAMIN BENSCHNEIDER



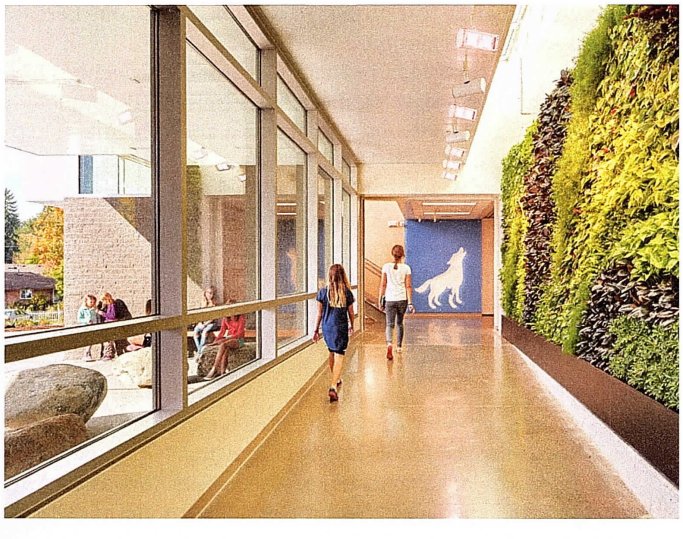


The routing and capture of on-site rainwater is a key concern for students as young as kindergarteners at the Hazel Wolf K–8 E-STEM School in Seattle. Founded in 2009 and named for a 20th-century green activist and Seattle resident, it's the city's first environmentally focused public school. And, by design and serendipity, its own sustainable building and grounds have become fodder for teaching. "Curiosity about the surroundings is something we really encourage," says Joe Bailey-Fogarty, who coordinates the E-STEM (environmental science-technology-engineering-and-math) program. "Observing closely, exploring and discovering how systems work is vital to the learning here."

In an earlier location, the school had 18 acres, traversed by a stream, but that was a temporary arrangement. A 3.2-acre triangular site, about nine miles north of downtown, was available for Hazel Wolf's permanent home. This leftover parcel was complicated by its adjacencies: an artery with banal, awkwardly skewed, low-rise apartment buildings interspersed with storefronts, and, facing the other edges, mostly neighborhoods with single-family houses.

NAC Architecture's Seattle office designed the new $39 million, 680-student facility, recognizing not only Hazel Wolf's pedagogical vision, but also the importance of resolving the site's ambiguous in-between condition. "The architecture needed to generate a real dialogue with its diverse adjacencies," says NAC design principal Boris Srdar. Other priorities also emerged. The school's founding principal, Debbie Nelsen, recalls asking for "a feeling, throughout, of being outdoors in nature, with plenty of sensory interest and many different types of experiences. We had to maximize learning opportunities on this tight site."

NAC responded with a clean-lined, 83,000-square-foot building, clad in corrugated and flat steel plates—some painted white—accented with orange, prefinished aluminum panels, and dark, split-face concrete masonry units. Shading fins and brows punctuate the south and east elevations, and some of



WELCOME SIGNS Just over the threshold of Hazel Wolf's main entrance, a living wall announces the school's identity (above). Parent-raised funding made its realization possible. The building's three-story wing (opposite) houses classrooms and labs, with decks extending atop the dark, orange-faced volumes.



the window groupings have a lively syncopated rhythm. Addressing the character of each adjoining piece of urban/suburban fabric, the massing was articulated as three main volumes: along the traffic artery, a long, low-slung "buffer" form houses such communal spaces as the gym and commons/cafeteria/auditorium; near a residential enclave is a three-story classroom structure; and connecting the two volumes is one containing the art room and library. While the classroom structure stands in a park-like setting, pulled back from the abutting single-family homes, the buffer wing holds its street edge, giving it definition.

But the centerpiece of the campus, framed by its built forms, is a large, protected courtyard with a 23-foot-wide, one-story-high ramp, rising like a hillside over the administration offices efficiently tucked beneath it. This dynamically "topographic" ground plane descends from fully accessible planted roofs down to a rain garden, thick with native vegetation. The route of stormwater is made visible as it flows from the rooftops down vertical conduits, through a grate-covered "mini-creek" to the water garden. There, it percolates through stones and sand into the ground. In the year since the school first opened, several students have chosen to analyze this process—and almost everyone here watches downpours with rapt attention.

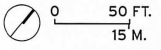
The ramp, covered in resilient playground surfacing, "has many uses, and we're still discovering more," says Nelsen. "People congregate on it, lunch on it, run on it, and it's become a great amenity for stress relief, especially for kids with ADD." The long, continuous paths and spatial fluidity reflect Hazel Wolf's educational philosophy, which prizes spontaneous, off-the-cuff teaching, alongside more formal approaches. Distinctions between work and play, indoors and out, and among certain disciplines tend to dematerialize, turning the site's compactness—and necessary overlap of programmatic functions—into opportunity. "The blurring of lines lets the whole place become a lab for learning and experimentation," says Srdar. "Whereas, with compartmentalization, serendipity gets lost."

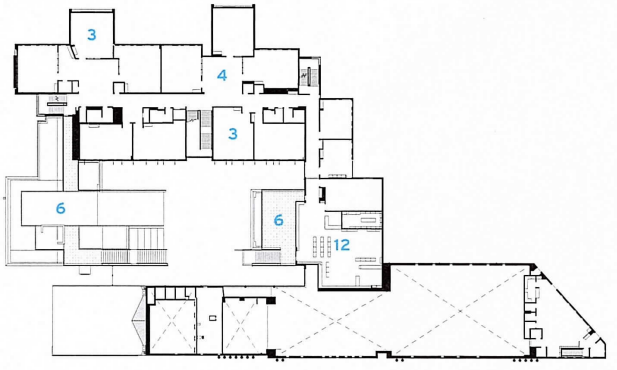
The site's meandering routes enfold botanical and butterfly gardens and calming "sit spots" for observing or drawing. "Our previous home had natural places kids gravitated to," says Nelsen. "We asked NAC to replicate that kind of experience." Near the periphery, some of these areas are open to locals, stitching together school and neighborhood, and giving back to a community that supported a bond to create Hazel Wolf's new home.

Connections to nature continue into the building, with big windows and a living wall just inside the main entrance, announcing the school's identity. With such indoor-out qualities, "a lot of spontaneous learning happens



FIRST-FLOOR PLAN





SECOND-FLOOR PLAN



THIRD-FLOOR PLAN

1 SCHOOL ENTRANCE
2 COMMUNITY EVENT ENTRANCE
3 CLASSROOM
4 LEARNING COMMONS
5 ART ROOM
6 OUTDOOR LEARNING
7 GYMNASIUM
8 COMMONS
9 STAGE
10 COVERED PLAY
11 COURTYARD
12 LIBRARY
13 SCIENCE ROOM

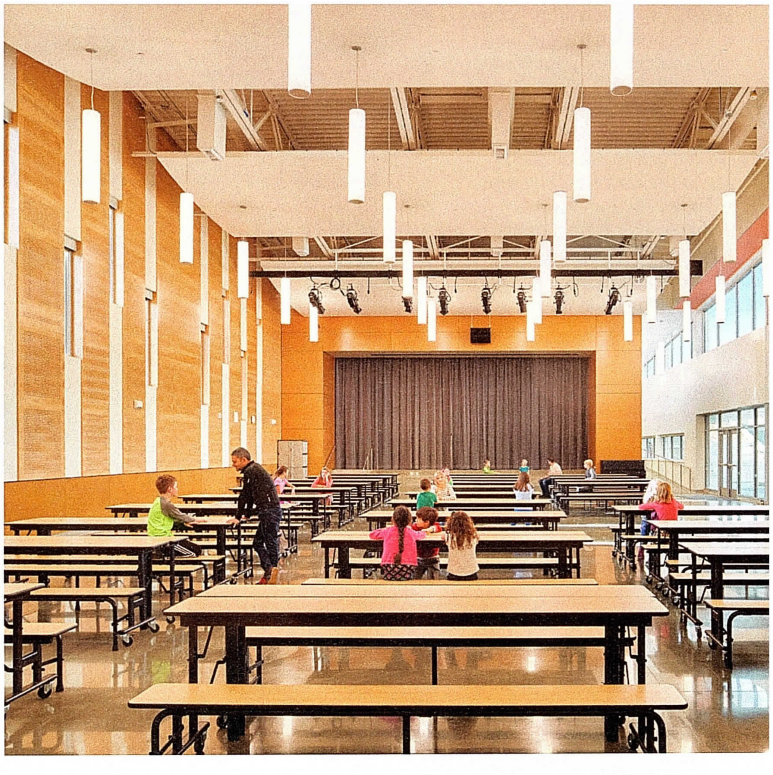




SECRET GARDEN The "buffer" wing—containing the gym and cafeteria/commons/auditorium—reclaims an edge of the arterial road (opposite), a stretch previously ill defined by the skewed apartment buildings across the way. The courtyard ramp, visible from the art room (right), is a focal point of the school. At its base, a water-filtration garden burgeons with native plants (above).







ALL AROUND THE (SCHOOL) HOUSE "Pods" (top), interspersed amid classrooms, provide informal breakout spaces for group or individual work. Interior windows in the library (above) overlook the commons, which doubles as the cafeteria and auditorium (right). A wall along the luminous central stair (opposite) reveals seismic bracing, as well as the calculations behind it.

here pretty seamlessly," says E-STEM coordinator Bailey-Fogarty. "We just step outside to demonstrate. Or in urban ecology class, we send everyone out to look for roots, shoots, spiders, and worms. The students live the environment they're studying—it's all integral—and their questions become part of the process."

Given the school's belief in the value of seeing what's going on all around, says Srdar, "we gave a lot of attention to sight lines and circulation." Interior pods, or breakout spaces, punctuate the classroom clusters, offering informal areas for group or individual work. Decks extend from the library and science labs, allowing experiments to happen outside. From the building's core, views down concrete-paved corridors reveal all four exposures. And the central stairwell includes a three-story window and an adjacent wall with exposed seismic bracing, set against a mural of the project's handwritten structural calculations.

Recently, after a sixth-grade team presented models for natural water filtration, one pupil commented: "I don't know any other school where you'd find a geothermal heating/cooling system [which Hazel Wolf has], a rain garden, and a living wall, but it's all here—and we get to learn about it."

In the near future, Hazel Wolf will get solar roof panels. "And you can be sure," says Nelsen, "that learning opportunity won't be missed." ■



credits

ARCHITECT: NAC Architecture – Kevin Flanagan, principal in charge; Matt Rumbaugh, project manager; Boris Srdar, design principal; David Shaffer, project architect; Brian Love, construction manager; Teresa Alvarado, project designer; Sarah Finis, interior designer; Malcolm Jollie, design advisor

ENGINEERS: Coughlin Porter Lundeen (civil and structural); Hargis Engineers (mechanical); Travis, Fitzmaurice & Associates (electrical)

CONSULTANTS: Murase Associates (landscape); Heery International (construction manager)

GENERAL CONTRACTOR: Lydig Construction

CLIENT: Seattle Public Schools

SIZE: 83,000 square feet

COST: $39 million

COMPLETION DATE: September 2016

SOURCES

CLADDING: Basalite (masonry); Northwest Precast (concrete); Morin; Northclad (metal panels)

ROOFING: Soprema; American Hydrotech (vegetated)

WINDOWS: EFCO; Construction Specialties (vertical sunshades)

GLAZING: Guardian Glass; Major Industries (skylights); CPI Daylighting (polycarbonate panels)

Bradesco Foundation Osasco High School | São Paulo | Shieh Arquitetos Associados

Social Studies

Adapted from a nondescript office building, a daylit high school with ample informal gathering spaces presents a new model for a challenged education system.

BY TOM HENNIGAN

PHOTOGRAPHY BY FERNANDO STANKUNS

When Brazilian bank Bradesco vacated a charmless 1970s office block in the Greater São Paulo city of Osasco, few imagined the building would go on to enjoy a second life as an innovative new high school. Nonetheless, this was exactly the future envisioned by Fundação Bradesco, the charitable foundation set up by the bank.

Expanding the building would help the foundation alleviate overcrowding at its nearby Osasco school, one of 40 such facilities that it runs across Brazil to provide free education to over 100,000 largely disadvantaged children ill-served by Brazil's woefully inadequate system. And for Shieh Arquitetos, charged with overseeing the transformation, the project was an opportunity to inject new thinking into an educational network that still produces uninspired schools with inward-looking classrooms feeding off joyless, narrow corridors. Though the project was a private commission, Shieh Shueh Yau, founder of the local firm, aims to spur change in public school design, opening up possibilities for more social environments, combined with daylit, flexible spaces—ideas long adopted in the U.S. and other countries. "I hope the project will demonstrate how architecture can play a part in improving education here," he says.

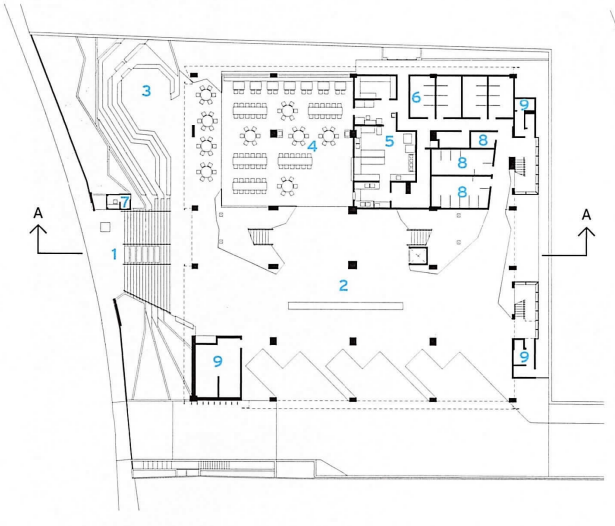
To that end, the design team has turned the onetime office building into a luminous, transparent center for education—a feat achieved largely by replacing concrete walls with expanses of glass and wrapping the building in an elegant, aluminum brise-soleil to mitigate glare and heat



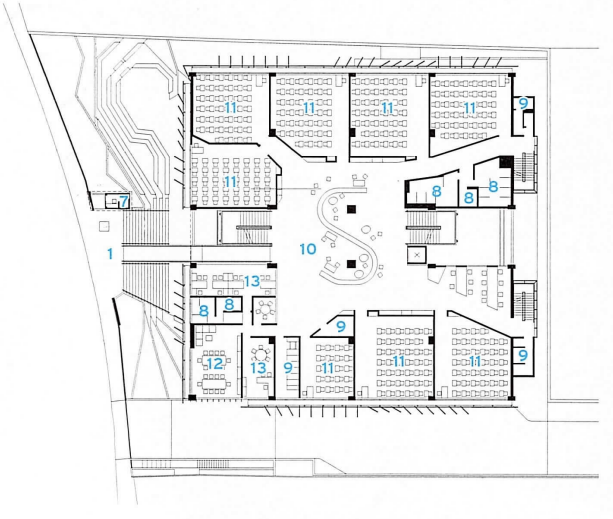
ABOUT FACE A low-rise bank building with punched-window facades has been transformed into a transparent, light-filled high school (above). Aluminum brise-soleils animate the upper levels (opposite); the ground-floor reception area leads into the school refectory, which flows to an outdoor social area.







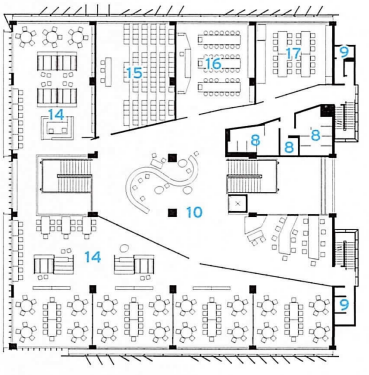
GROUND-LEVEL PLAN



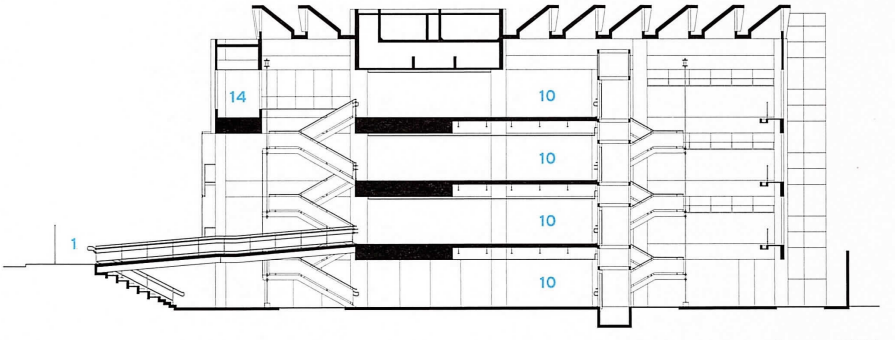
SECOND-LEVEL PLAN

0 30 FT.
10 M.

1 ENTRANCE
2 COVERED COMMONS
3 AMPHITHEATER
4 DINING HALL
5 KITCHEN
6 LOCKER ROOM
7 SECURITY
8 RESTROOM
9 MECHANICAL/STORAGE
10 HALLWAY COMMONS
11 CLASSROOM
12 TEACHERS' PLANNING
13 ADMINISTRATION
14 LIBRARY/STUDY
15 AUDITORIUM
16 LAB
17 DIGITAL FABRICATION



FOURTH-LEVEL PLAN



SECTION A - A

0 15 FT.
5 M.



COMMON GROUND Illuminated by the front and rear atria, central commons areas (opposite) provide circulation between stairs and classrooms and offer inviting spaces to study and hang out. Glass walls visually connect a laboratory (above) to the fourth-floor commons.

gain. The architects started by stripping the original concrete structure back to its steel skeleton and then stripping some more. By removing parts of the floor slabs, the team carved out a soaring atrium at the front entrance, complementing an existing, though now expanded, one at the rear. Housing open stairs topped by skylights, the atria carry daylight deep into the building to the loungelike commons, which are the heart of the new school. These teakwood-lined spaces, where students kick back on beanbags or work at fixed wood benches, not only encourage social interaction and informal study, but also connect vertical circulation to the classrooms and other areas. Moreover, these spaces eliminate the need for corridors, which Shieh and his son and partner Leonardo describe as aesthetically and socially detrimental.

One of the design team's biggest challenges was how to efficiently handle the circulation for over 1,300 teenagers (who attend either a morning or afternoon session) in a four-story, 33,000-square-foot facility. "We kept the classrooms on the second and third levels to avoid too much vertical circulation by such a large number of students," explains Leonardo. "Then, on the top floor, we have the less intensively used spaces, such as the laboratories, auditorium, and library."

Students can enter the second level up a gentle ramp from the street. But the principal reception area is on the below-grade ground floor, accessed by stairs. Here, a multiuse indoor-outdoor area includes the school refectory and a retaining wall, cleverly disguised as seating for a small outdoor amphitheater, where students can hang out between classes. While the spare, white-walled classrooms are sober, the rest of the school, with its unprogrammed spaces and whimsical furnishings, feels something like a funky university arts building. Nowhere is this sensation more potent than on the top level: the architects eliminated the brise-soleil from the street-facing facade to create brighter, open spaces for the labs, library, and auditorium, which are separated by glass walls, and which seem to dissolve into the cityscape beyond. It is on this level that principal Nahid Nakib Gil most notices


C
D





LEARNING LESSONS Bright and busy, the library (left) provides ample niches for socializing or studying. The top floor's study area, with views out to the city, is in constant demand by students (opposite, bottom). The front atrium (below) carries daylight deep into the building.

the impact that the new environment has had on students. "The library is always full, and students use the school much more for studying outside of class time," she says. "They were enchanted with the building when they saw it, and now they value it more."

Two of her charges could not agree more. "The library is sensational," says Bianca, 17. "I feel more comfortable studying here than at home—the new building gives you the desire to study." Her friend Barbara, 18, puts it another way: "Before, school was all closed spaces and small windows. Other schools we studied in felt like prison in comparison. Here, there is so much glass, you have a sense of freedom." ■

Tom Hennigan is the South America correspondent for The Irish Times, *based in São Paulo.*

credits

ARCHITECT: Shieh Arquitetos Associados – Shieh Shueh Yau, Leonardo Shieh, Irene Shieh, Lenita Pimentel, Karen Minoda, Nathalia Grippa, Ricardo Azevedo, Yuhu Minami, Juliana Stendard

CONSULTANTS: Thermoplan (mechanical); PHE (electrical/plumbing); MG&A (foundation); Sresnewsky (acoustics); Dinaflex (facade)

GENERAL CONTRACTOR: iNova TS Engineering

CLIENT: Bradesco Foundation

SIZE: 40,000 square feet

CONSTRUCTION COST: $8 million

COMPLETION DATE: February 2017

SOURCES

STRUCTURAL SYSTEMS: Metalon, Zanaga

EXTERIOR CLADDING: Kiir, Permetal

ROOFING: Metalon

DOORS: Carvalho

ACOUSTICAL CEILINGS: Knauf

GLASS PARTITIONS: Abatex

FLOOR AND WALL TILE: Braston, Jatobá, NBK

VINYL FLOORING: Forbo

LIGHTING: Bertolucci, Lumini

ELEVATORS: Otis



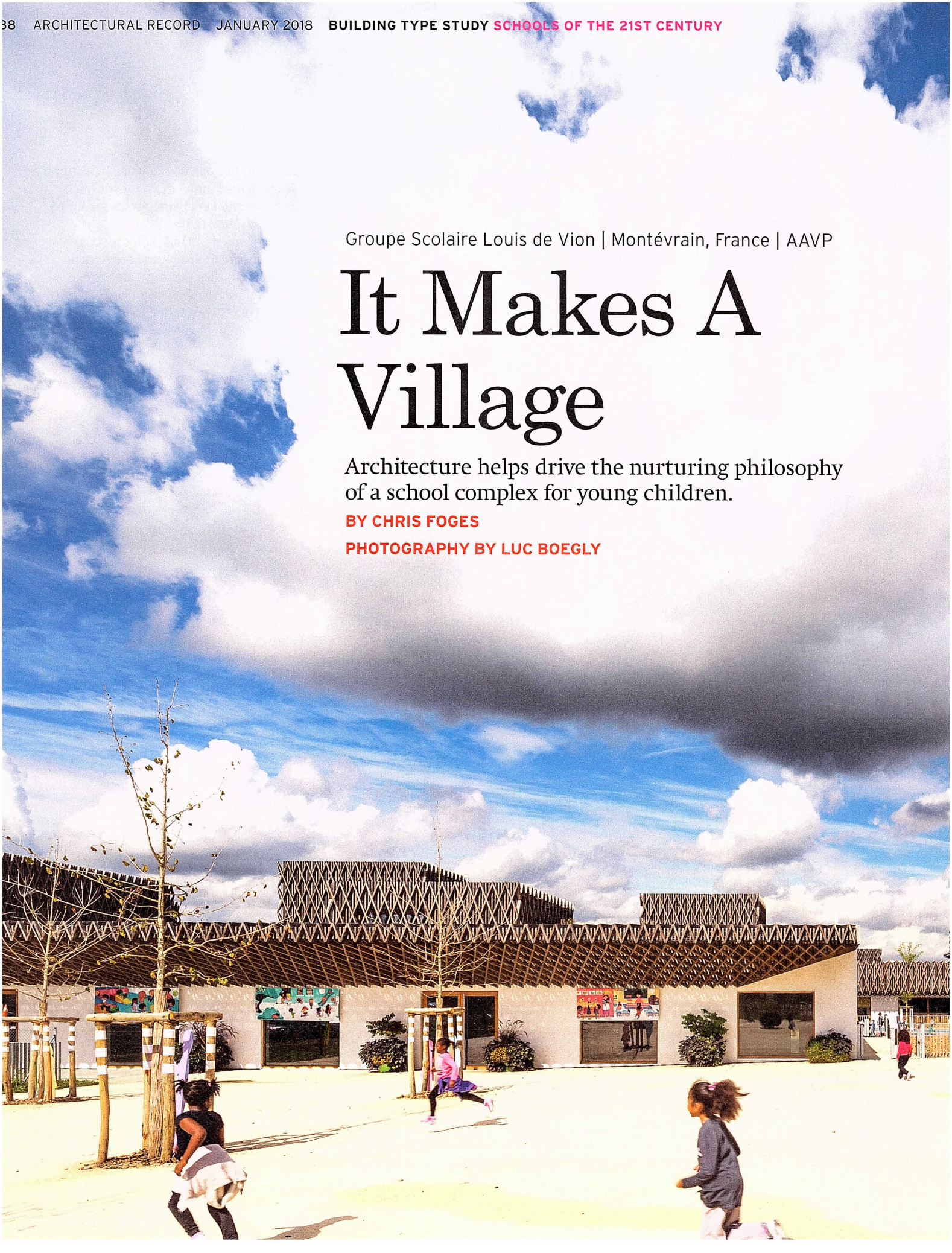
Groupe Scolaire Louis de Vion | Montévrain, France | AAVP

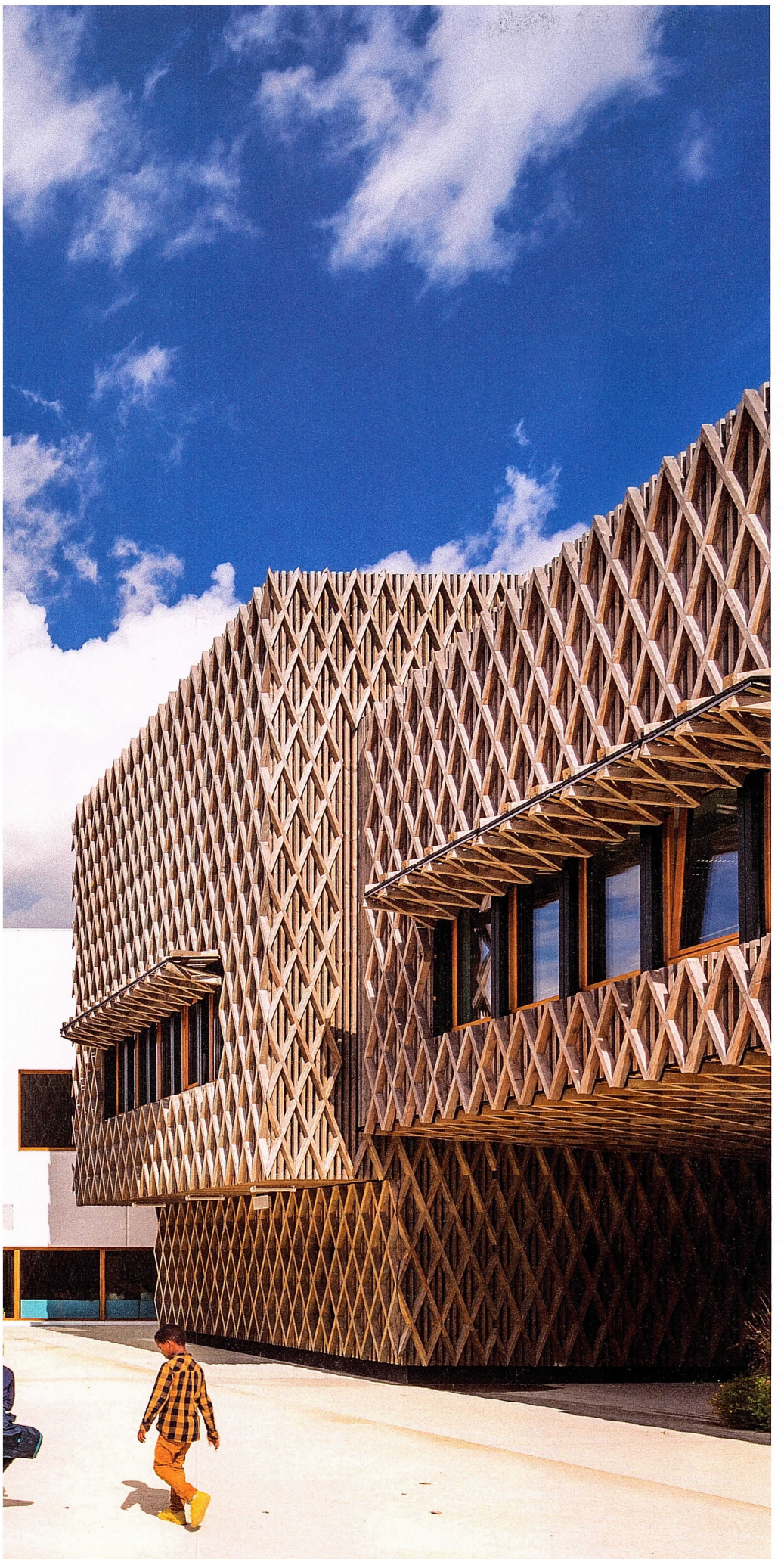
It Makes A Village

Architecture helps drive the nurturing philosophy of a school complex for young children.

BY CHRIS FOGES

PHOTOGRAPHY BY LUC BOEGLY





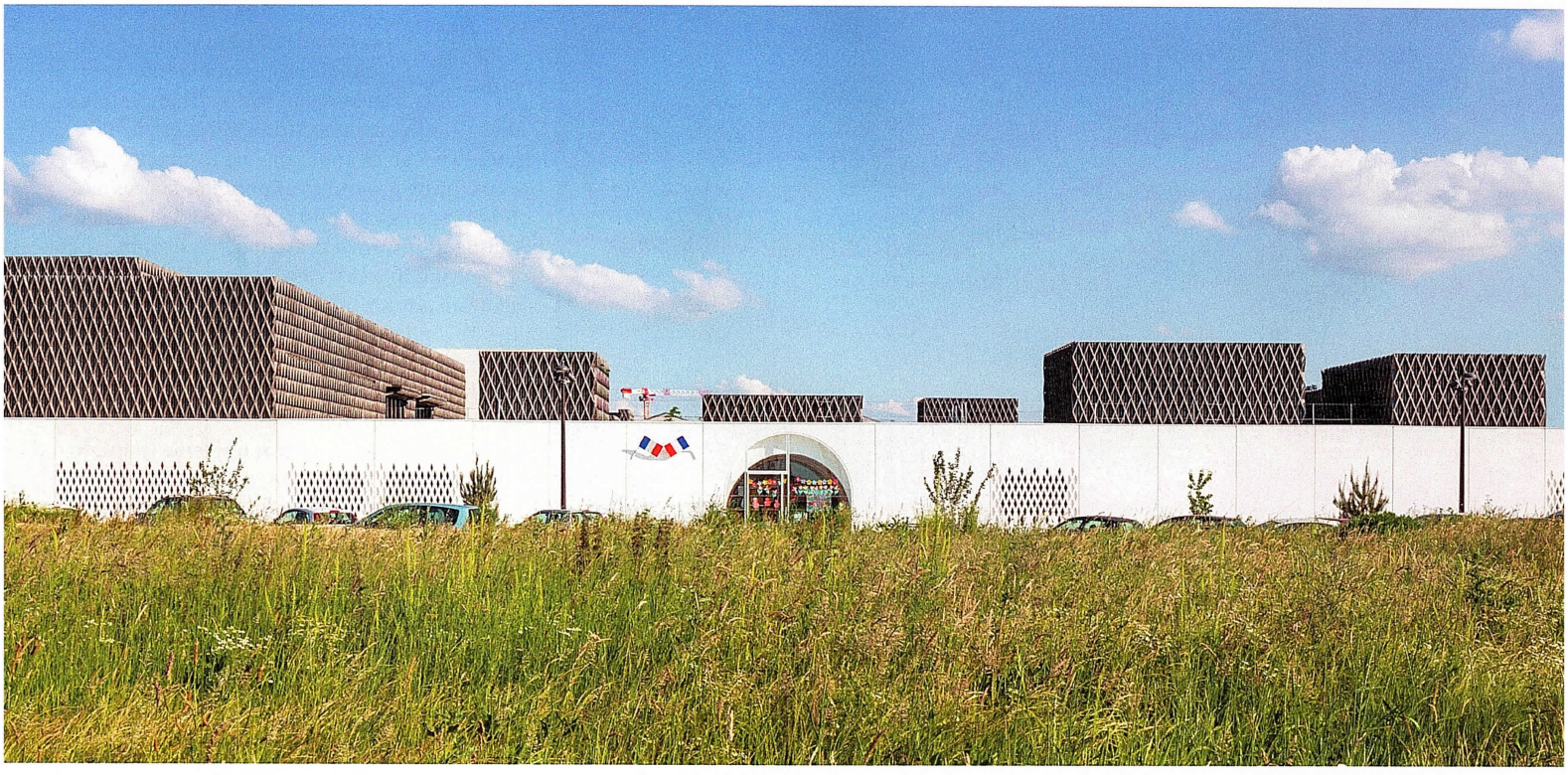
As architect Vincent Parreira walks around the Louis de Vion school complex in Montévrain, near Paris, his inclination to see from a child's point of view quickly becomes apparent. He frequently drops to the ground to experience spaces as a child might, gazing up into a double-height volume as if from a preschooler's sleeping mat, or exulting in a sky view from a window set below an adult's line of vision. His concern goes beyond tailoring spaces to children's physical stature, however: every aspect of the architecture is conceived to address their social and emotional needs.

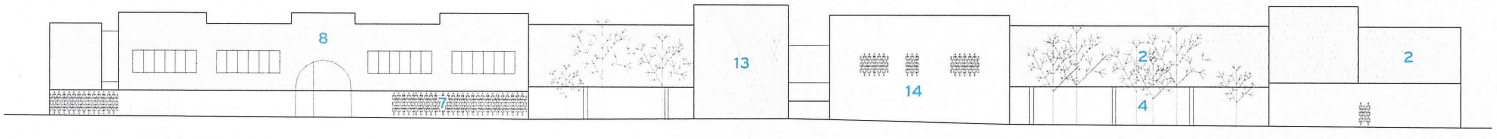
School should be "a real universe in microcosm," says Parreira, "a place that feels different from your house and the world outside—where there is a sense of surprise and possibility." To make an environment in which children can feel secure and enjoy their independence, his instinct was to make an inward-looking campus with limited views in from or out to the street. This introversion was also suggested by the building's context—or lack of it. Montévrain is a popular, fast-growing suburb whose dominant feature is the EuroDisney theme park, just visible from the school across farmland. Closer at hand, housing is now going up on all sides that wasn't there when Parreira's Paris-based office, AAVP, won the school project in a competition.

The 56,000-square-foot complex is sandwiched between a road and parallel pedestrian route, which follow the curve of a perfectly circular freeway that rings the Disney park. It comprises three separate facilities: an elementary school, a preschool, and a community center offering daycare outside school hours. The bulk of the program is arranged in a series of connected, two-story concrete and timber-frame structures along the pedestrian route. Behind that, a single-story wing for the preschool and a linked cafeteria block enclose a play yard for those young children. Another yard for the older students is open to the sunny southwest, but separated from the road by an obligatory parking lot. Where there are gaps between buildings, visual connections between the public and private realms are partly screened by densely planted gardens.

"We wanted to give the children a building like a castle, a dreamlike place," says Parreira, "and the absence of windows to the outside

FORMS & SURFACES Materials identify the components of the complex: white concrete for the single-story leisure center, and pine cladding on the elementary school's south facade, where automated shutters act as shading devices. Pine also wraps the canopy of the adjacent white-concrete cafeteria block.





NORTH-EAST ELEVATION

0 30 FT.
10 M.



GROUND-FLOOR PLAN

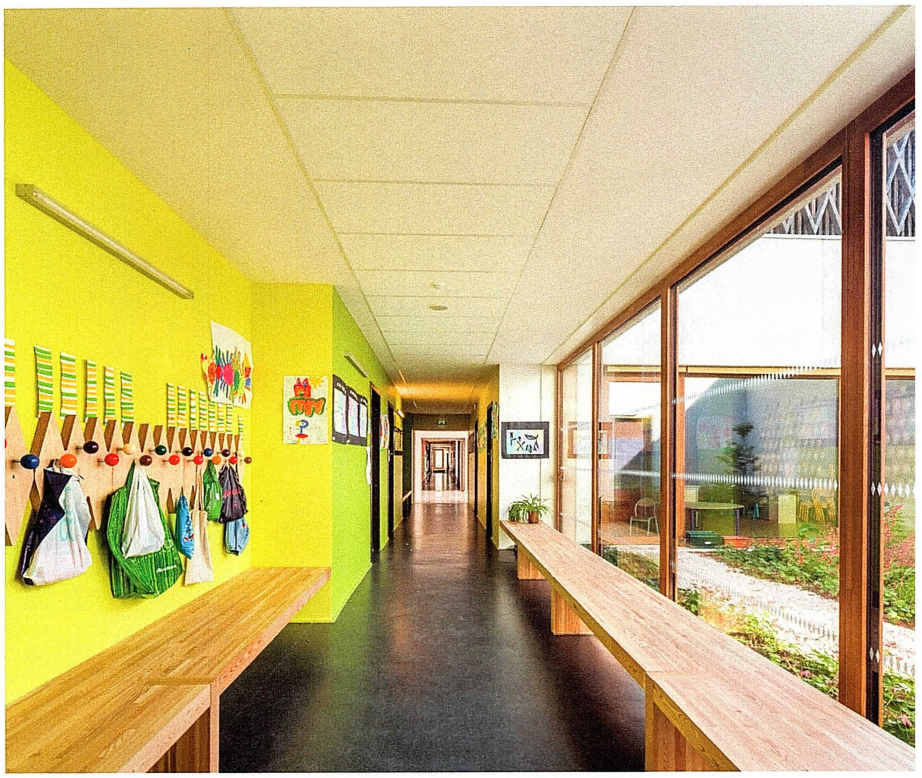


SECOND-FLOOR PLAN

0 50 FT.
15 M.

1 PRESCHOOL ENTRANCE
2 PRESCHOOL
3 PRESCHOOL LOBBY
4 PRESCHOOL YARD
5 PRESCHOOL PLAYROOM
6 PRESCHOOL CAFETERIA
7 ELEMENTARY SCHOOL ENTRANCE
8 ELEMENTARY SCHOOL
9 ELEMENTARY SCHOOL YARD
10 CLASSROOM
11 ELEMENTARY SCHOOL CAFETERIA
12 LIBRARY
13 ADMINISTRATION
14 COMMUNITY/DAYCARE CENTER
15 SERVICE ENTRANCE

PRIMARY COLORS Wood rooftop enclosures (opposite) contain mechanicals or tops of double-height spaces. Preschool rooms, in artist James Turrell–inspired hues, adjoin gardens (right). Grade-school and community center furnishings are bright and durable (below).



and the material treatment of the facades help to give that impression." The first-floor elevations are faced in white concrete and are largely blank, except for occasional diamond-shaped perforations over windows. The upper floor and several boxy rooftop enclosures for skylights and technical equipment are wrapped in a richly textured skin of pinewood. A tracery of diagonal timbers overlaid on a rainscreen of vertical slats extends the diamond motif. The depth of the facade suggests solidity, while its intricacy creates a lively play of shadows.

Parents accompany children as far as an anteroom at the entrance to each school. From there, children proceed alone into double-height halls that mark the true moment of arrival, each "an event in itself, like a miniature cathedral," suggests Parreira. With a lean budget of around $240 per square foot and a strictly prescribed program, incorporating such exceptional spaces was challenging. For Parreira, however, they are essential: classrooms are highly regulated environments, both spatially and behaviorally, "so you need to create spaces outside that give children the freedom to speak and act as they want," he says.

This was principally achieved in the circulation areas.





LINKED IN The preschool faces an enclosed play yard (below), screened from the street by plantings (opposite). Its lobby (left) features an oculus and offers views to the cafeteria block, where internal windows visually connect pre- and primary school dining areas.

Though the plan is conventionally economical, using internal corridors double-loaded with classrooms, Parreira was able to squeeze enough from the budget to increase the dimensions of these routes so that they also function as places to work or play. "The spaces are simple but have a lot of thought behind them," says Parreira. "They represent the capacity to do something different."

To create those differences, savings were made on finishes and fixtures. Inexpensive lighting and acoustic tiles are carefully arranged in patterns on classroom ceilings. While Parreira still detests using them, he notes there is compensation to be found for such compromises. For instance, he was able to increase the dimensions of a narrow corridor leading to a fire exit to make "a joyous space, with a window and enough room for a table and chairs."

Other features intended to stimulate the senses and imagination were threatened by the risk aversion which increasingly charac-





terizes environments made for children. AAVP argued successfully for exposed copper piping in bathrooms ("people worried that children would lick it") and wide benches in the preschool cloakroom (a falling hazard). The client also had significant concerns over raw concrete walls in the elementary school corridors, but Parreira was determined to use it—in part to reclaim the material from negative associations of social deprivation—and, again, he prevailed.

Whatever the client's initial misgivings, the municipality is pleased with the building. The mayor leads tours for visiting dignitaries, and Montévrain's chief building official, Zoheir Bouakel, says, with approval, that "this building embodies a boundary between two worlds—light and shadow, wood and concrete, modernity and heritage." It is also true, as Parreira readily admits, that others, including the principal (appointed after the building was completed), are less convinced by its material and architectural ethos. Nevertheless, he remains certain that the job of the school architect is to advocate for children, and that to enhance their freedom, the architect must himself "take some liberties." ■

credits

ARCHITECT: AAVP (Vincent Parreira Atelier Architecture) – Vincent Parreira, Baptiste Egea, Nicolas Fontaine Descambres, design team

ENGINEERS: DVVD (structural); ALTIA (acoustical)

CONSULTANTS: Atelier Roberta (landscape); INGEROP (sustainability); ATEVE (roads, utilities); 12 ECO (building economics)

CLIENT: Aménagement 77, on behalf of the City of Montévrain

SIZE: 56,000 square feet

CONSTRUCTION COST: $13.7 million

COMPLETION DATE: September 2016

SOURCES

WOOD: Arbonis (cladding and roof)

MASONRY: Cari Thouraud

PRECAST CONCRETE: Jousselin

CURTAIN WALL, RAINSCREEN: Moreau

MOISTURE BARRIER, SKYLIGHTS: CIBETANCHE

GLAZING: Riou

DOORS: La Fraternelle

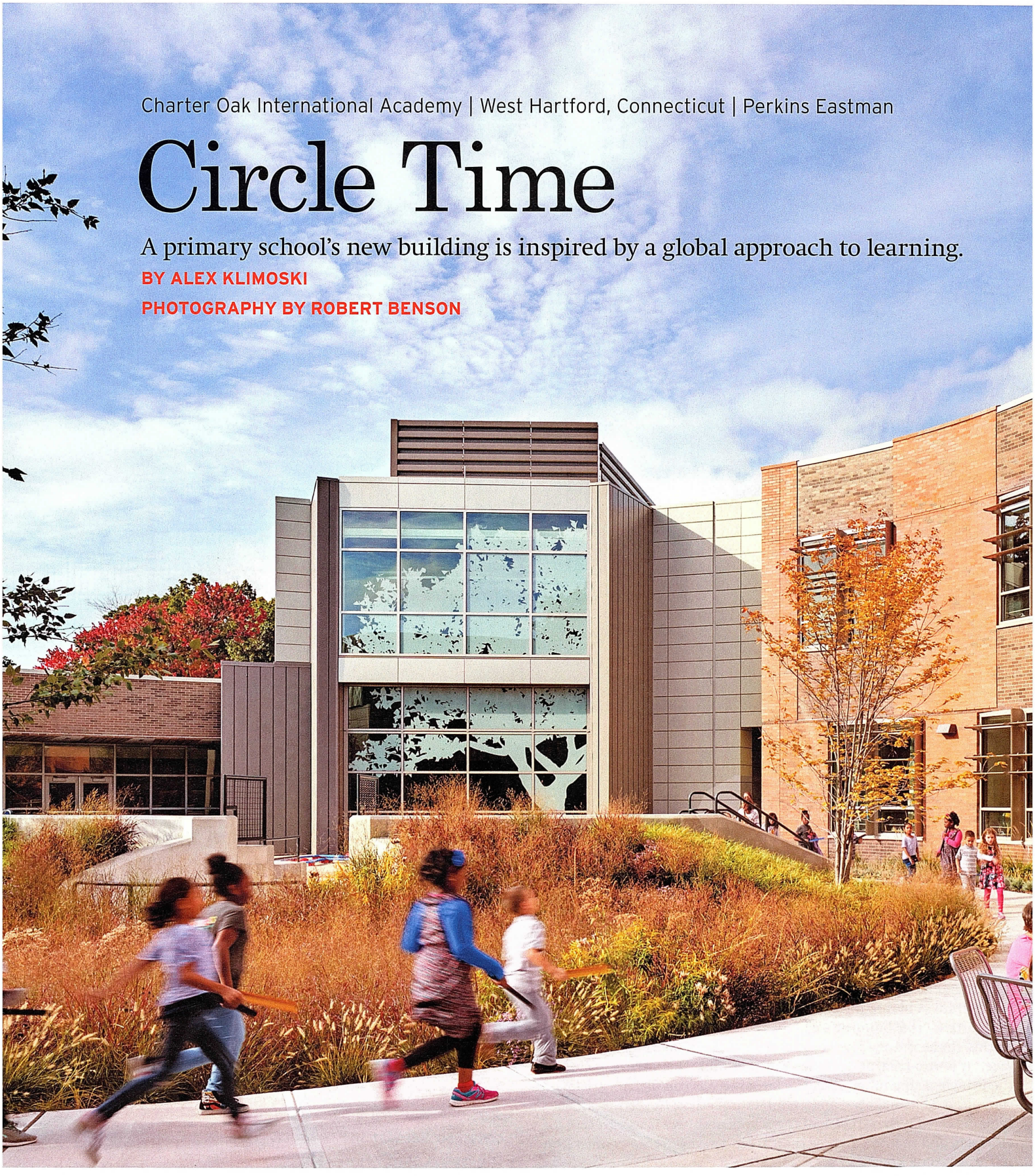
Charter Oak International Academy | West Hartford, Connecticut | Perkins Eastman

Circle Time

A primary school's new building is inspired by a global approach to learning.

BY ALEX KLIMOSKI

PHOTOGRAPHY BY ROBERT BENSON





Why make a school building circular? For the Charter Oak elementary school (named after Connecticut's official state tree), the answer can be explained by its philosophy. As an International Baccalaureate (IB) school, its curriculum is closely aligned with the United Nations' mission of fostering world peace. Established in 1968 in Geneva, the IB program—offered at close to 1,700 primary and secondary schools, both public and private, in the United States alone—teaches students to make connections between conventional coursework and international issues. Face-to-face interactions are an integral part of study; just as diplomats often convene in a ring-shaped formation at the U.N. building, students gather regularly for discussions in the round. So when architects from Perkins Eastman presented possible configurations for the new facility to Charter Oak faculty and parents, the symbolism of a circular plan clicked.

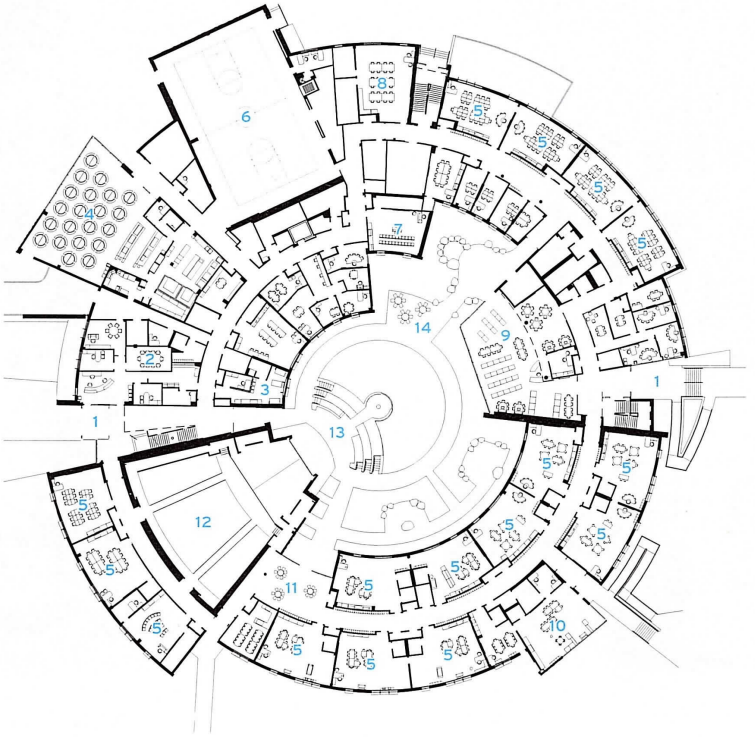
Conceived as a "pavilion in the park," the 83,500-square-foot building sits on a 9.5-acre lot surrounded by traditional suburban houses. Playgrounds and outdoor learning spaces wrap around the building's south, east, and north sides, with a parking lot and large grassy field to the west. In the interest of keeping it in scale with the neighborhood, the school rises as high as two stories only where it is farthest from residences. On the south, where it sits closest to a main intersection and houses (not shown in photo), the building is one level (pre–K and kindergarten occupy the ground floor; in the northern, higher part, grades one through five are above). Its curved shape diminishes perception of its size, which is revealed slowly as one walks around it, either inside or out.

The new doughnut-shaped structure replaces a 1930s concrete-framed Art Moderne building with a 1970s rectilinear addition, located on what is now the parking lot. As a nod to its predecessor, it is clad in brick of a similar orange, though its structural system is steel. When



IN THE ROUND The building's circular plan (above) was decided early on, largely because of its allusion to interconnectedness, one of Charter Oak's core values. An added benefit of the shape is the central courtyard (opposite), which accommodates an amphitheater, rain garden, and areas for gathering.



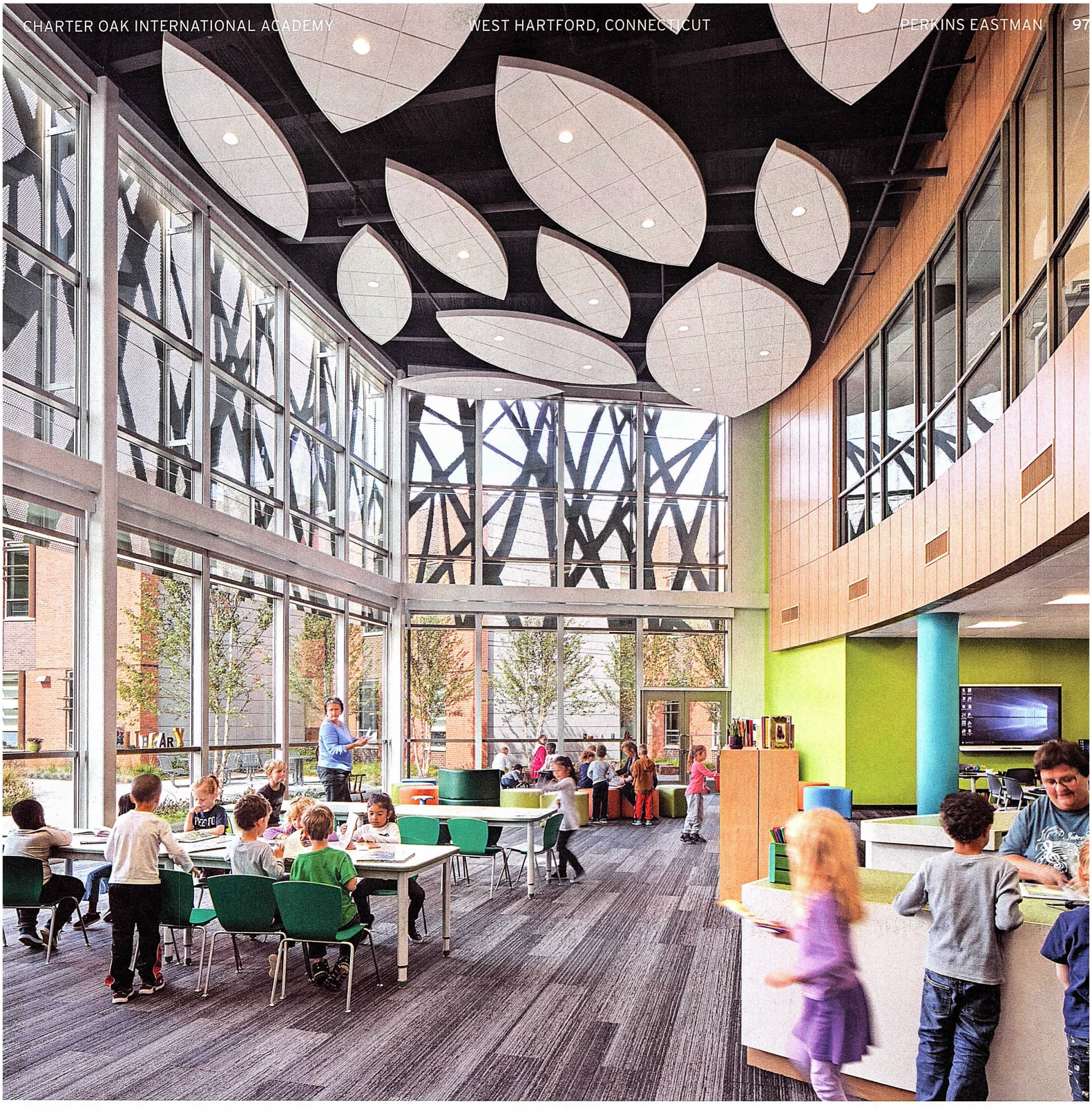


FIRST-FLOOR PLAN

0 50 FT.
15 M.

FRONT AND CENTER The new building is clad in a brick similar in color to its 1930s predecessor. The design incorporates generous glazing, connecting occupants to the outside. Windows (above) are fritted in tree shapes. In the library (opposite), the same oak tree pattern is created from perforated metal screens, applied over the glazing. Leaf-shaped acoustic panels hang from the ceiling in the library and auditorium.

1 ENTRY
2 ADMINISTRATIVE OFFICES
3 HEALTH SUITE
4 CAFETERIA
5 CLASSROOM
6 GYMNASIUM
7 MUSIC ROOM
8 ART ROOM
9 LIBRARY/MEDIA CENTER
10 COMMUNITY ROOM
11 STUDENT COMMONS
12 AUDITORIUM
13 OUTDOOR AMPHITHEATER
14 LEARNING COURTYARD



the project was completed in 2016, the historic building was razed. Although the community found it endearing, the former school was dark and constraining, and wasn't attracting the desired enrollment. (As a public magnet school, it has a lottery system through which town residents can be chosen to attend.) State funds financed the project.

From the planning stage, input from the community was crucial to the design. The architectural team found that children and parents sought similar qualities in the new school: natural light, connections to the outdoors, and variety in the design of spaces. All of the classrooms, along the inner and outer perimeter walls, feature generous glazing; other areas, such as the courtyard, teaching garden, media center, and small rooms for individual instruction, provide alternative teaching environments. "Throughout the duration of the project, the children were involved, and that's powerful," says Kate Jerram, Charter Oak's curriculum specialist. In line with the IB philosophy, the construction of the new school served as an educational opportunity for students, who met with the architects on a regular basis to learn about the building's development.

Another important consideration was connecting the school's occupants to nature. The central courtyard provides a lush setting of regional plants for learning, respite, and passage from one side of the building to the other (tricycles are a popular mode of transportation).









NATURAL CONNECTION The auditorium (opposite, top) merges into the central courtyard when its rear door is lifted. Entryway colors in the curved corridors orient students (opposite, bottom left); wood paneling lends warmth to the main stair (opposite, bottom right); and open classrooms allow views out (above).

An outdoor amphitheater becomes an extension of the (indoor) auditorium when the double-height glazed door at the stage's rear is lifted.

References to nature, particularly oak trees, also abound on interior surfaces: the windows of the auditorium and library, facing one another in the courtyard, feature designs of branches, the first as a frit on the glazing, the second in perforated metal screening; acoustic panels in both double-height spaces take the form of leaves; the hallways and classrooms pop with green-painted doorways and walls, and occasional wood paneling. Fitting with the curriculum, which incorporates the values of sustainability, Charter Oak is a LEED Gold–certified building with a geothermal heating system and a solar panel array on the roof.

Now in its second year, Charter Oak is already seeing the benefits of its new facility. The retention rate from pre–K to kindergarten increased to 100 percent, and the school district received over 400 requests for admission for the 2017 school year, up from the usual 100. And, according to teachers, children seem happier. "The building has a very dynamic feel," says principal Juan Melián. "I'm not an architect, but it is serving us very well." ■

credits

ARCHITECT: Perkins Eastman – Joseph Costa, principal; Mark McCarthy, design principal; Michael Berger, design architect; Fritz Morris, project manager; Joseph Culotta, project architect

ENGINEERS: BVH Integrated Services (civil/structural/m/e/p/fp); Welti Associates (geotechnical); GZA Geoenvironmental (geothermal); Diversified Technology Consultants (environmental)

CONSULTANTS: Richter & Cegan (landscape); Atelier Ten (sustainability); Brooks Acoustics Corporation (acoustic); D'Agostino & Associates (IT/security)

CONSTRUCTION MANAGER: Fusco

CLIENT: West Hartford Public Schools

SIZE: 83,500 square feet

PROJECT COST: $43.3 million

CONSTRUCTION COST: $39.4 million

COMPLETION DATE: November 2016

SOURCES

MASONRY: Watsontown Brick

GLASS: Oldcastle BuildingEnvelope

UPWARD-ACTING DOORS: Renlita Doors

ACOUSTICAL CEILINGS: Armstrong

PHOTOVOLTAIC SYSTEM: Summer Hill Solar

IGS Kalbach-Riedberg | Frankfurt | NKBAK

Assembly Line

Prefabricated wood units stack to create friendly interim quarters for a middle school.

BY MARY PEPCHINSKI

PHOTOGRAPHY BY THOMAS MAYER





PERFECT FIT Rough-finished Douglas fir cladding helps the boxlike form of this temporary school harmonize with the landscaping of a new residential quarter to the north and an orchard to the south.



When the city of Frankfurt needed a temporary facility for a newly established middle school, the IGS Kalbach-Riedberg, they turned to NKBAK architects. The local firm had completed another provisional facility in 2015 for the pre-K-through-first-grade European School Frankfurt or ESF (RECORD, January 2016, page 116) using prefabricated wood modules to meet a tight planning and construction schedule. The architects welcomed the chance to adapt this kind of construction to a different type of school, says firm coprincipal Andreas Krawczyk, "to test the possibilities of the modular wood system." The brief here called for a cafeteria, offices, and 11 classrooms to accommodate 200 students, in grades five and six.

Situated on the city's periphery, between a new residential district and an orchard, the 26,400-square-foot IGS will eventually serve 600 students in grades five to 10 at its permanent location, a few miles away. The first 100 fifth graders entered in September 2017, and the temporary school will be used for the next few years until the final building is completed. To bridge the gap, a similar provisional facility for grades seven and eight, adjacent to this one, is being planned.

IGS is the abbreviation for a hybrid facility known as an Integrated



GROUND-FLOOR AND SITE PLAN

1 ENTRANCE
2 OUTDOOR PLAY
3 CENTRAL CORRIDOR
4 CAFETERIA MODULE
5 KITCHEN MODULE
6 CLASSROOM/OFFICE MODULE
7 STAIRWELL
8 RESTROOM
9 RESIDENTIAL BLOCK





KIT OF PARTS A window-wall on the building's northeast edge (opposite) carries daylight into the entry and corridors. The units were delivered and installed over a three-week period (above). Factory-built stairs have the same lavender hue as the halls (right).

Comprehensive School (in translation). German middle schools are divided into three categories: general (Hauptschule) and enhanced-general (Realschule) programs, both going through grade 10, and a college-prep track (Gymnasium), which continues to the 12th grade. IGS pupils at the same grade level and from all three programs attend the same classes, but receive assignments appropriate to their ability.

Krawczyk's partner, Nicole Kerstin Berganski, says the site was extremely narrow. To fulfill the program's requirements, the architects devised a linear three-story structure using 90 prefabricated modules, which are stacked into two parallel forms connected by a long central hall on every level. They infused the resulting double-loaded corridors with a sense of spaciousness and light by pushing the forms in opposite directions, enough to create generous window walls that provide daylit entrances at grade and airy hangouts on the upper floors.

Developed in collaboration with Kaufmann Systems, the modules are made of spruce, and function as individual rooms or are combined to create larger spaces, such as the cafeteria. They measure 9 feet 10 inches wide and 23 feet long; each came from the factory with pre-installed ceiling heaters, and electrical and mechanical ducts. Delivery and assembly on a slab took three weeks.

While NKBAK opted for an aluminum-clad skin on their first modular school, which was in an urban context, the firm specified Douglas fir boards with a rough-sawn finish so that the IGS's facade would blend with its greener surroundings. A dense surface protects against water penetration. The facade includes floor-to-ceiling double-glazed fenestration comprised of alternating transparent and translucent panels. The clear panes are fixed and shaded by interior blinds. The translucent ones are operable and protected by fixed, external wood panels, perforated with 4-inch-round holes that provide natural ventilation. The building does not have air-conditioning and lacks thermal mass which, combined with its extensive glazing, can cause overheating, a problem that arose at the ESF. The north and south facades have integrated sun shading.

Inside, the spaces are spare and basic, dominated by the raw wood of the modules and visible ceiling systems. But the whole place is enlivened by surprising colorful accents—lavender linoleum flooring in the corridors and stairways, canary yellow or moss green tiles and linoleum floors for the restrooms—thoughtfully selected to appeal to the students. On a recent visit, both school principal Susanne Goelitzer, and her deputy, Mareike Kauenfluegel, noted that parents were initially skeptical about the exposed construction. However, the good sound quality in the classrooms, largely the result of acoustic ceiling panels and "micro-holes" on the interior of the modular units, won them over.

The exposed wood has unexpected benefits. Affixing papers to walls in German schools is discouraged because tacks and tape deface paint-





BUILDING BLOCKS
Extensive glazing in classrooms (above) and along the ends of corridors (opposite) infuses the interiors with daylight and provides views of the neighborhood. The 9-foot-10-inch-wide hallways (left) have colorful floors and are used as informal work areas.



ed surfaces, but "here it is easy to put up information for everyone to see," says Kauenfluegel, effortlessly inserting a pushpin into the wood. Needless to say, artwork and flyers now adorn the hallways and classrooms.

The entire project—which took only 15 months to design, fabricate, and construct—was completed in May of 2017 and cost 20 percent less than a typical school. Though a temporary facility, the IGS Kalbach-Riedberg feels cozy and familiar, qualities that NKBAK achieved through simple means—color, material, light, air, and a straightforward plan. The staff reports that children not only feel comfortable, they have become curious about the building, and 80 percent have chosen "architecture" for their independent study project. "They want to know," says Goelitzer, "if you build a round corner differently from a square one." ■

Berlin-based Mary Pepchinski is an author and architect who teaches at the University of Applied Sciences in Dresden, Germany.

credits

ARCHITECT: NKBAK – Nicole Kerstin Berganski, Andreas Krawczyk, Johannes Lemke, design team

ENGINEERS: Merz Kley Partner ZT (structural); Ecotec (m/e); Wagner Zeitter Bauingenieure (fp)

GENERAL CONTRACTOR: Kaufmann Bausysteme

CLIENT: Stadtschulamt Frankfurt, represented by Hochbauamt Frankfurt

OWNER: City of Frankfurt

SIZE: 26,400 square feet

CONSTRUCTION COST: $5.3 million

COMPLETION DATE: May 2017

SOURCES

GLAZING: Saint-Gobain

ROOFING: Dachland; Bauder

BUILDING COMPONENTS: Becker 360 (curtain wall, wood window frames, wood doors and entrances)

HARDWARE: Dorma; FSB

ACOUSTIC CEILINGS: Heradesign

LINOLEUM: Forbo

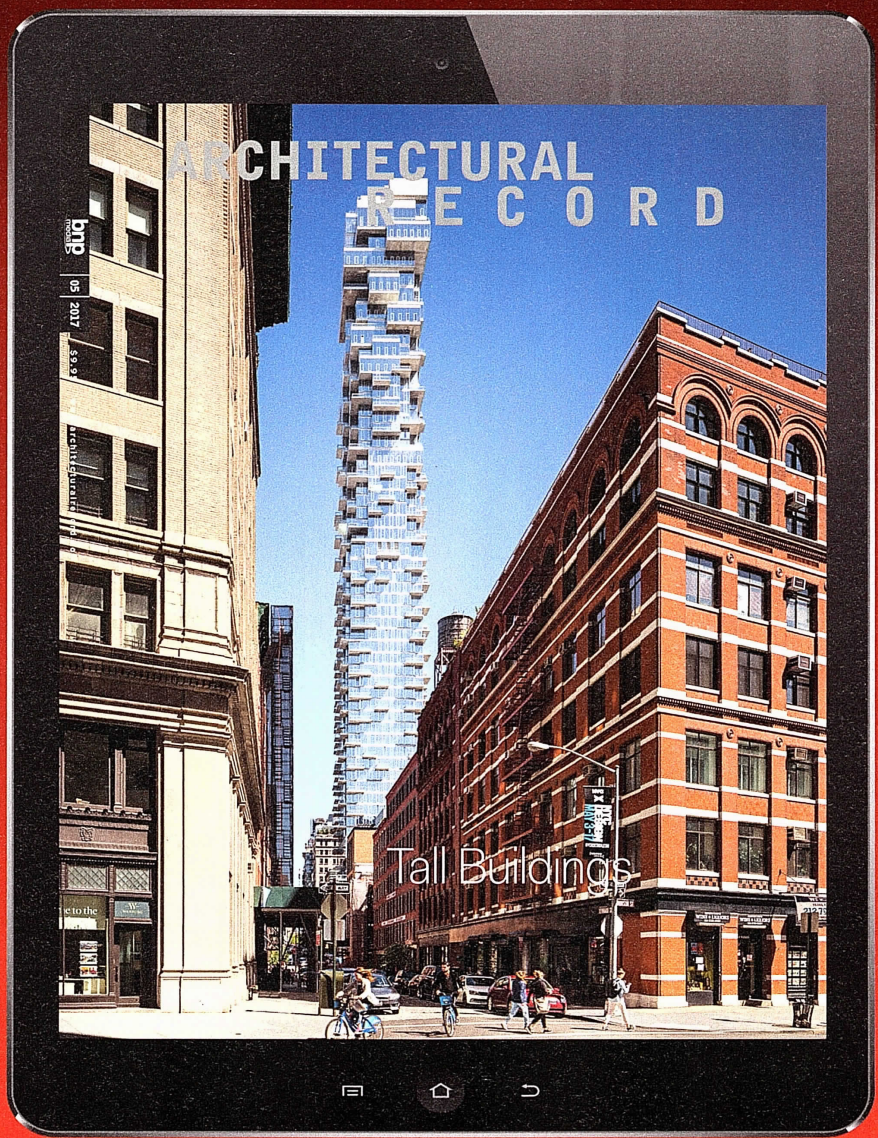
ACOUSTIC WALL PANELS: Trikustik

FLOOR AND WALL TILE: Villeroy & Boch

LIGHTING: Trilux

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RECORD KITCHEN & BATH

These commercial and residential projects underscore how expanded views and abundant daylight transform interior spaces.

108 The French Laundry
112 Los Angeles House
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116 Ontario Residence

FRENCH LAUNDRY

The French Laundry
Yountville, California
Architect **Snøhetta** and **Envelope A+D**

AT THE SAME TIME that Snøhetta was designing an addition to the San Francisco Museum of Modern Art, the firm was in the thick of revamping another Northern California landmark—two projects of enormously different scales but equal intensity. Tucked away in the quiet Napa Valley town of Yountville, the small but world-renowned restaurant, The French Laundry, has been a gastronomic destination, and aspiration, for over two decades, and its owner, chef Thomas Keller, famous for his exacting standards. "The challenge with many of our projects is that our client is multiple people," says Snøhetta founding partner Craig Dykers. "So with one person, it's more specific, more precise, more focused."

Chef Keller wasn't looking to redesign the restaurant. In fact, nothing about the dining room was altered and not a single seat added. What he was after, instead, was a completely transformed kitchen. This wasn't the first time he created a new cooking space since opening The French Laundry in 1994. He did so once before when he moved the original kitchen out of the restaurant itself, with a staff then that had grown from four to 50. It is now over a hundred.

But this latest renovation was major—spanning four years and costing $8 million. First, a temporary kitchen was built and the existing one torn down before construction of the new kitchen, and an annex for support functions and the 14,000-bottle wine collection, could even begin. Once that was completed, the temporary kitchen was dismantled

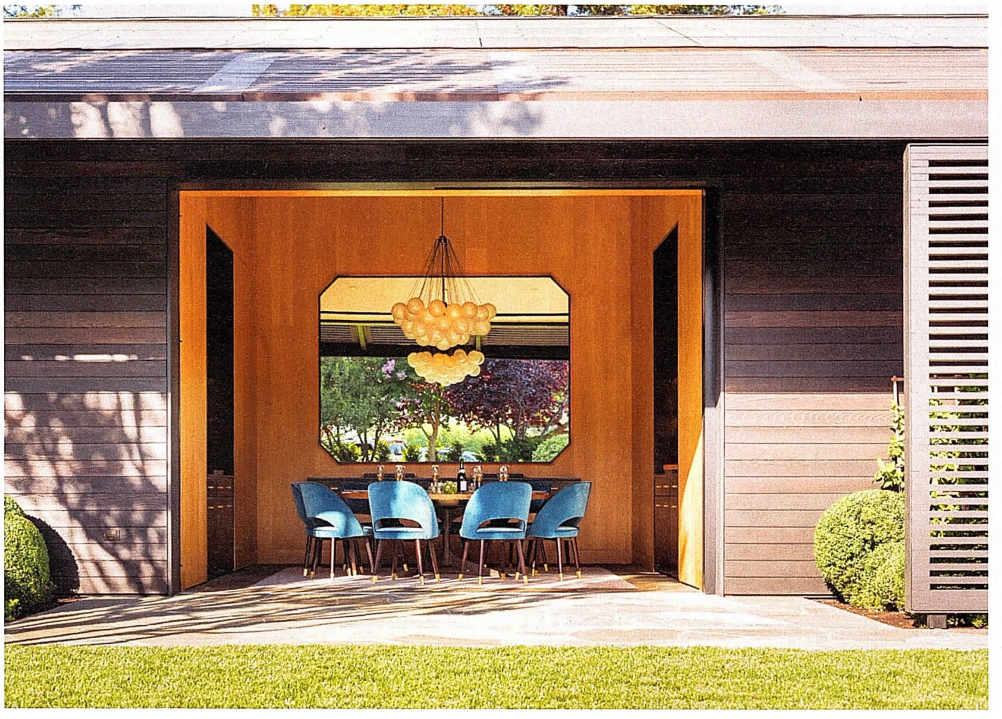




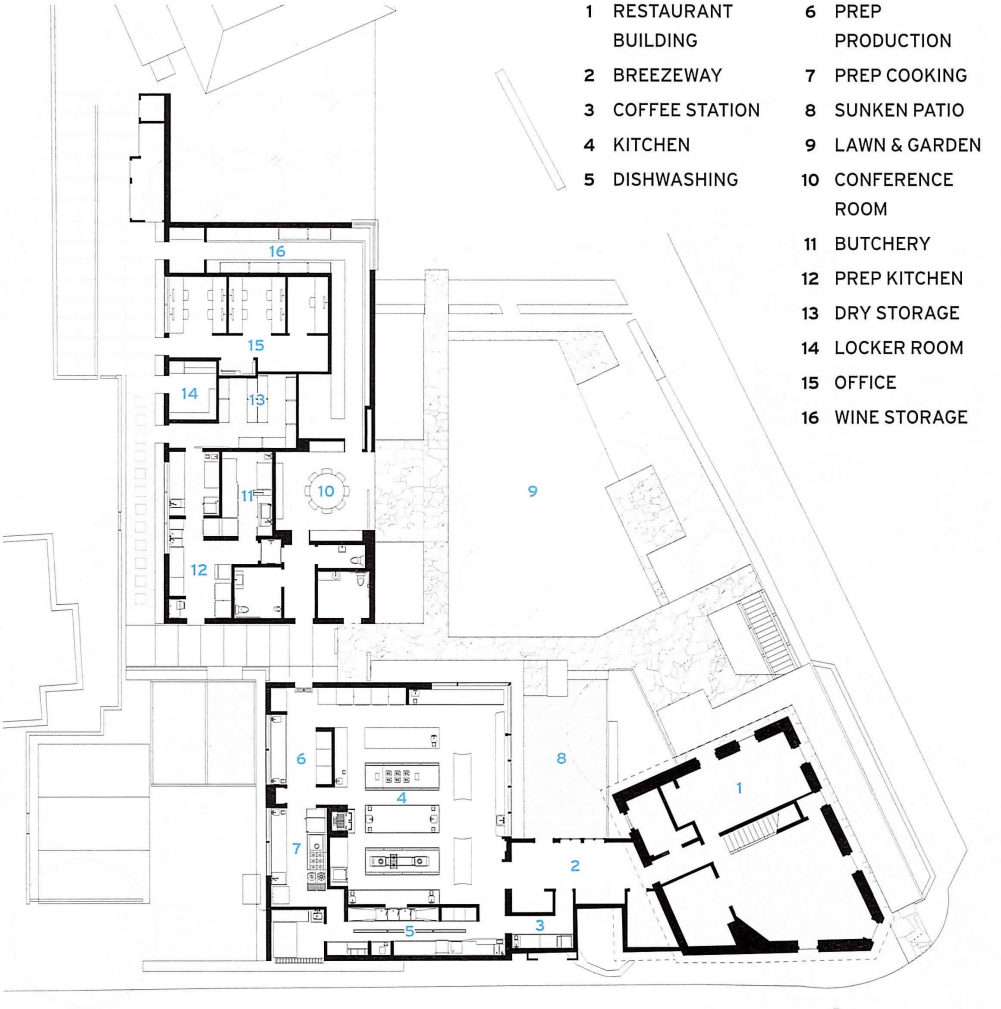
PHOTOGRAPHY: © MICHAEL GRIMM



CHEF D'OEUVRE Thomas Keller (in all-white) minds the pass table in his new kitchen, where a curved, skylit, and ventilated ceiling caps the French top ranges and terrazzo floor. A hearth is a new feature of this kitchen (opposite).







1 RESTAURANT BUILDING
2 BREEZEWAY
3 COFFEE STATION
4 KITCHEN
5 DISHWASHING
6 PREP PRODUCTION
7 PREP COOKING
8 SUNKEN PATIO
9 LAWN & GARDEN
10 CONFERENCE ROOM
11 BUTCHERY
12 PREP KITCHEN
13 DRY STORAGE
14 LOCKER ROOM
15 OFFICE
16 WINE STORAGE

GROUND-FLOOR PLAN

0 16 FT.
5 M.

GARDEN VARIETY A custom table in the annex is made from a 150-year-old fallen oak tree (above, left). Chef Keller wanted "as much greenery as possible, in different textures, colors, and heights" (above). A ribbon window allows guests views into the inner workings of the kitchen (opposite).

credits

DESIGN AND LANDSCAPE ARCHITECT: Snøhetta – Craig Dykers, partner; Nicolas Rader, project director

ARCHITECT OF RECORD: Envelope A+D – Douglas Burnham, principal

CONSULTANTS: Arup (acoustics); Terremoto (landscape and horticulture); Harrison Koellner (food service)

GENERAL CONTRACTOR: Wright Contracting

CLIENT: The French Laundry Partners

SIZE: 4,430 square feet

CONSTRUCTION COST: $8 million

COMPLETION DATE: February 2017 (kitchen); June 2017 (landscape)

SOURCES

CHARRED-WOOD PANELS: Delta Millworks

CURTAIN WALL AND WINDOWS: Kawneer

FRITTED GLASS: Viracon

SOLAR PANELS: NRG

VENTILATED CEILING/HOODS: Halton

WORKSTATIONS: Hestan

RANGES: Bonnet, Hestan

OVENS: Rational

SURFACES: Cosentino

GFRG PANELS: GC Products

PENDANT AND RECESSED LIGHTS: Zumtobel

PAINT: Benjamin Moore



and the landscape—a significant aspect of the project—was replanted.

"The philosophy of the menu hasn't been impacted because of the change," says Keller. "What has been impacted is efficiency and staff comfort." The new 1,980-square-foot kitchen is only 25 percent larger than the previous U-shaped one. "Because kitchen work is about intimacy, you actually want things to be as close together as possible at the workstations," explains Dykers, who, designing his first professional kitchen, spent hours on end with project director Nicolas Rader observing and sketching how the chefs worked. "It was difficult sometimes to make our analysis, because they would always be feeding us."

Keller says he and Dykers instantly bonded when they first met, and the friendship eventually turned into a working relationship. "Our sensibilities are similar," Keller says. "His designs are minimal, and I'm more of a minimalist rather than someone who likes to add many things. We have this idea that four ingredients on a plate is sufficient."

From the exterior, the single-story, pitched forms of the kitchen and annex buildings are rather simple, referencing agrarian structures and conforming to the requirements of the historic neighborhood. The kitchen building is partly clad in charred wood, in the spirit of the traditional Japanese Shou Sugi Ban technique. A more contemporary fritted glass, with a dense composition of layered, swooping curves evocative of the motions of chefs' hands at work, wraps the corner of the building. A ribbon window is perfectly positioned to provide views for the chefs out toward the half-acre grounds while allowing guests—who are encouraged to linger in the adjacent patio and other discrete areas of the garden for outdoor dining or casual drinks and cigars before and after meals—a glimpse of the inner workings of the kitchen.

The new landscape, also by Snøhetta, and designed to have a sense of random planting—some species of which are intended to grow onto the low-slung buildings—offers private nooks but also more open space. It also conceals the geothermal wells that provide all the refrigeration, heating, and cooling to the kitchen and annex. (A PV array over the entire roof of the annex satisfies up to half the electricity demand.)

The heart of the project, though, is inside the kitchen, where design tweaks, sometimes mere inches, greatly transformed work flow and circulation. Immaculately outfitted with state-of-the-art stainless-steel equipment that seems to float above the terrazzo floor, and walls and countertops in a white, antimicrobial surface, the light-filled space is topped by a dramatic curved ceiling. Formed from GFRG panels that are hung from the wood-frame structure, the ventilated ceiling, which required special approvals, replaces traditional hoods that are often in the line of sight. "There were a lot of inefficiencies before," commented chef de cuisine David Breeden during a tour of the space. "It was visually unsavory."

The ceiling's arched shape improves the acoustics and communication among chefs—kitchens are notoriously loud, with all the banging and yelling—by bouncing sound back. Embedded within it, LED lights were carefully calibrated to the appropriate color temperature so that the food in the kitchen looks exactly as it does in the dining room. Some features, like a hearth, rotisserie, and cheese humidor, are new to this kitchen, while areas for butchering, prep, and dessert were expanded.

According to Dykers, Chef Keller asked for the best kitchen in the world. Almost a year into being operational, Keller says the new space is still evolving, and will continue to. "We realize there's no such thing as perfection. It's really the quest for perfection that drives you to move forward." *Josephine Minutillo*

Wonderland
Park Avenue
Los Angeles
Architect**Assembledge+**

BEFORE ITS conversion into a two-story house, this Los Angeles residence was a rambling 2,400-square-foot ranch of little note. Though it had views of Laurel Canyon, near parkland by Garrett Eckbo, and the neighboring houses were original Midcentury Modern residences—including Pierre Koenig's Case Study House #21—it lacked the same pedigree and grace. The owners, a couple with three children, decided it was time to reconnect with the area's historic style and its lush views. Specifically, they wanted to feel as if they were living in a modern treehouse.

To achieve that, the project team from Assembledge+, including David Thompson, the principal in charge, built a second level to hold the master suite and replaced walls facing the pool area on the ground floor with as much glass as possible. They employed red cedar and created new proportions to extend the landscape indoors. As the kitchen is central to the plan, all of these strategies help define its space.

To open up the floor plan, the architects demolished a peninsula that had cut off the original 200-square-foot kitchen from the dining room. Two new rectangular islands, set perpendicular to one another, allow foot traffic to flow through the new 300-square-foot kitchen. One island serves as a social gathering point and buffers the activity of the cooking and food-prep areas. The other provides storage and extra counter space.

In the old kitchen, cooking was a centralized experience, with the range set in a run of base cabinets along an interior wall. In the new plan, cooking appliances are strategically spaced throughout the room: the cooktop is located on an island, double ovens are built into one wall, and, on the second, "outer" island, a microwave is installed under the counter at a child-friendly height. The arrangement minimizes congestion at busy mealtimes.

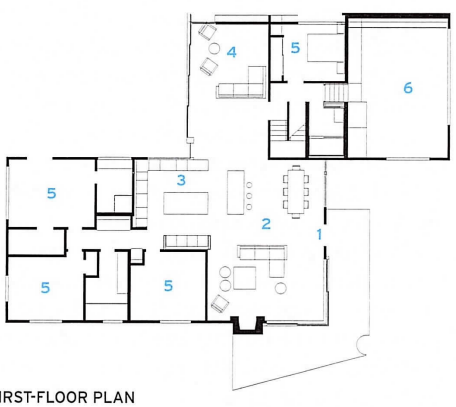
With glass walls overlooking the rear courtyard, architects took steps



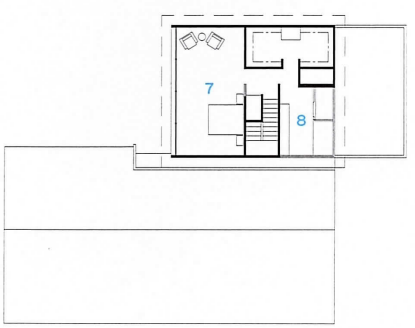




OPEN HOUSE
A band of glazing in the roof brightens the sink area (opposite). Sliding glass walls connect the adjacent living area (above) to the backyard. Sheathed in cedar, the new second-floor addition (right) angles up to capture views of the canyon landscape.



FIRST-FLOOR PLAN



SECOND-FLOOR PLAN

0 10 FT.
3 M.

1 ENTRY
2 LIVING/DINING
3 KITCHEN
4 FAMILY ROOM
5 BEDROOM
6 GARAGE
7 MASTER BEDROOM
8 MASTER BATH

to keep sight lines open, even specifying an integral downdraft vent for the cooktop to eliminate the need for a ceiling-mounted range hood.

Above the sink, a skylight allows daylight to brighten the work area and contribute to the al fresco ambience of the room.

In the adjoining dining and living areas, operable glass walls complete the physical and visual connection to the outdoors. They slide like a telescope to sit stacked when open to the pool area.

Almost as striking as the combined kitchen/living area's views are its wood elements. Custom cabinets are built from sustainably harvested oak. Western red cedar planks clad the ceiling—a continuation of the same wood that wraps the exterior of the newly built second floor.

The house's relationship to the environment isn't limited to its use of natural materials. On the new roof, the architects installed photovoltaic panels to supplement conventional energy sources; indoors, they added a graywater system that uses recycled water to irrigate the landscape enhancing the residence's new design.
Leslie Clagett

credits

ARCHITECT: Assembledge+ – David Thompson, principal; Scott Walter, project architect; Gregory Marin, project manager

ENGINEER: CM Peck

INTERIOR DESIGNER: Alexander Design – Vanessa Alexander, principal

GENERAL CONTRACTOR: Above Board Construction

CLIENTS: Yaniv and Nina Tepper

SIZE: 3,600 square feet

COST: withheld

COMPLETION DATE: November 2016

SOURCES

GLAZING: Arcadia

COUNTERTOPS: Caesarstone

FAUCET: Dornbracht

SINK: Franke

APPLIANCES: Sub-Zero; Wolf

FLOOR TILE: Porcelanosa

DOWNLIGHTS: Halo



Chelsea Apartment
London
Architect **Neil Davies**

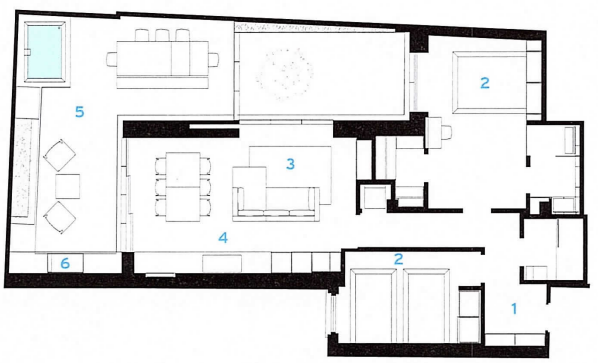
THE ONE-WALL kitchen typical of small urban spaces is elevated in this London garden apartment to a richly clad, Zen-inflected, space-saving area by Neil Davies Architects. When firm principal Neil Davies took on the project, the two-bedroom unit was dark and broken up by interior walls, and the only sources of light were conventional punched windows. But the apartment was wrapped by an L-shaped garden, and Davies saw an opportunity to bring in more light.

To make use of the outdoor space as well, his team needed to reconfigure the apartment's layout. The old 60-square-foot kitchen—previously wrapped by the walls of the bedrooms and those blocking the garden side—changed the most. The architects knocked down interior walls to open garden views and merged the kitchen area with the old living room. They then replaced exterior walls with glass doors, transforming the newly combined space into an indoor-outdoor oasis. One three-panel, sliding glass-door system measures 12 feet wide; a second two-panel system spanning 14 feet pockets into one wall. The revamped master bedroom now also has access to the garden via a 6¼-by-8-foot glass pivot door where a wall with a small window once stood.

To further integrate the outdoors with the apartment's main kitchen/living area, the Davies team relocated the kitchen along the former living room's back wall—a step which required them to move the gas and plumbing lines 17 feet. They minimized the profiles of appliances by installing gas and microwave ovens, a drawer-style dishwasher, and a full-size refrigerator on the same wall, integrated behind panels matching the cabinet fronts, while the cooktop's exhaust fan can be retracted into the counter. The resulting 20-foot-long kitchen features a blackened stainless-steel backsplash, a countertop of white-veined gray marble, and black-laminate cabinet doors with push-to-open mechanisms hidden inside for hands-free operation, all of which contribute to the sleek, pared-down aesthetic the client requested. "The owner worked and lived throughout the far east and has a love of the clean lines of contemporary Japanese architecture," Davies says.

This affinity is prominently addressed overhead too, in a custom-built system of oak slats built to control sound as well as add to an Asian-inspired aesthetic. The slats





FLOOR PLAN

0 9 FT.
3 M.

1 ENTRY
2 BEDROOM
3 LIVING ROOM
4 KITCHEN
5 GARDEN
6 OUTDOOR KITCHEN



VIEWS FROM DOWN UNDER Neil Davies Architects combined the kitchen and living areas, and replaced exterior walls with glass doors to visually expand the space in a below-grade apartment. A pivot door (above) connects the garden to the master bedroom.

conceal an acoustic quilt that lines the nearly 8-foot-high ceiling and provides a layer of privacy from the apartment above.

Outside, the Zen influence is apparent in the stone-inlaid patio's integrated concrete planter, which holds black bamboo, and in a tranquil rock garden that surrounds a young maple tree. At one end, a granite countertop conceals a refrigerator and grill, covered in the same cabinet fronts used indoors, to create an outdoor kitchen.

Now, with new floor-to-ceiling views of the bamboo garden and access to it from several parts of the apartment, one can almost forget that the space sits below grade in a 28-unit building. *Sheila Kim*

credits

ARCHITECT: Neil Davies Architects – Neil Davies, principal; Paul Flynn, Ross Ellmore, Thomas Kronig, team

ENGINEERS: Eckersley O'Callaghan (civil); Price & Myers (structural)

GENERAL CONTRACTOR: Melex Renovations

CLIENT: James Barshall

SIZE: 1,430 square feet

COST: $347,000

COMPLETION DATE: August 2017

SOURCES

CUSTOM MILLWORK: M11 Joinery

BACKSPLASH: Rimex Metals

COUNTERTOPS: GMI Stone

CABINETRY: Richlite

FLOORING: Sphere8

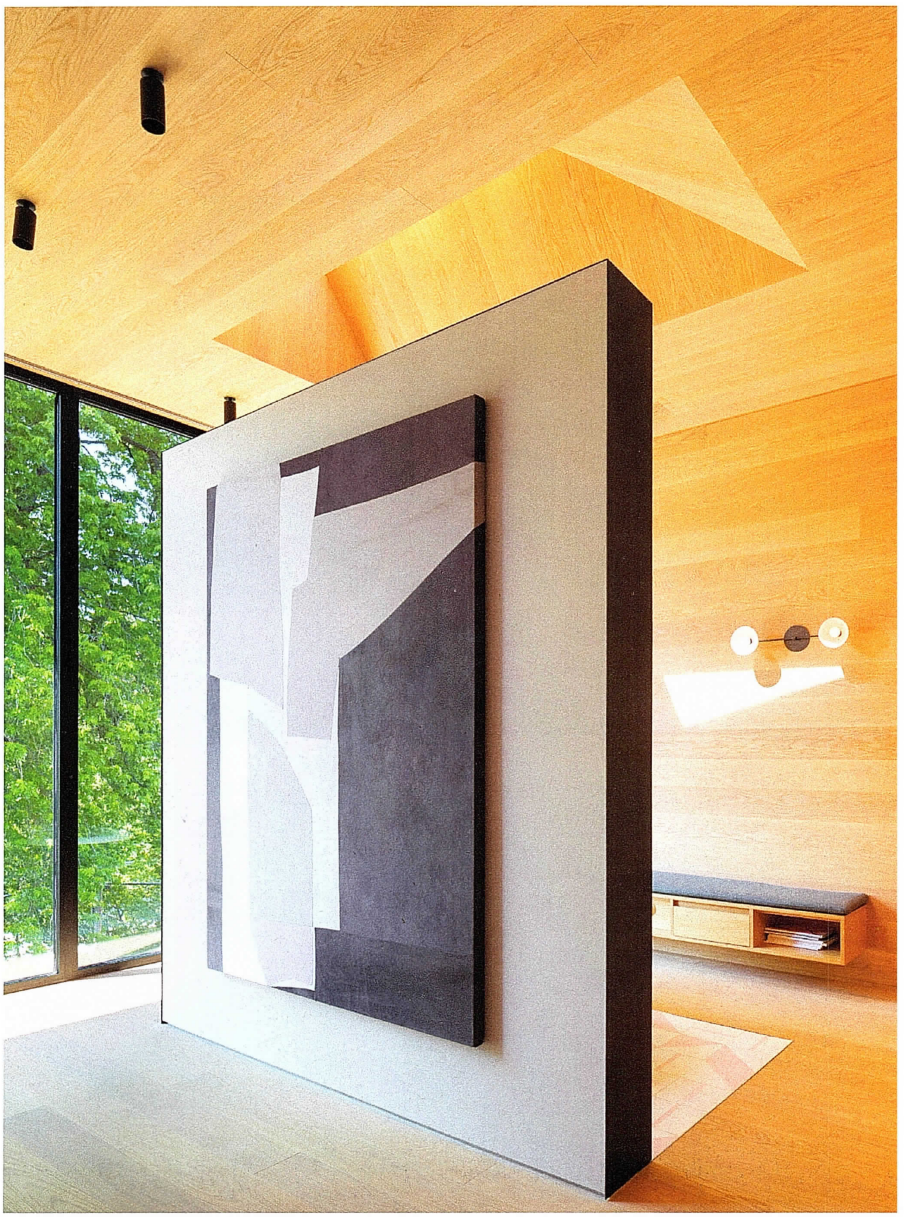
LIGHTING: Zumtobel (track lighting); Foscarini (pendants); Delta Light (downlights)

DINING CHAIRS: Hee Welling Studio

TABLE: SCP and Fritz Hansen







Ontario Residence
Toronto
Architect **superkül**

WHILE THE OWNERS of this Toronto house wanted to preserve its Queen Anne Revival exterior, the mansard roof and small windows didn't translate to a lot of livable space for the family of four.

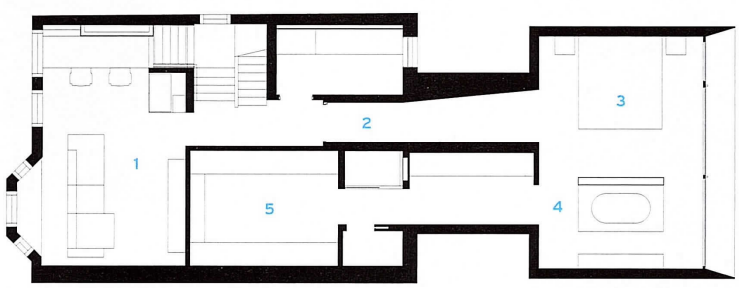
A married couple with two daughters, they needed modern bedrooms, larger closets, and a year-round connection between interiors and a backyard they felt they couldn't fully appreciate because of the small, old windows. Local firm superkül began addressing the family's brief by installing a 23-foot-wide dormer with three windows on the garden-facing side of the third-floor kids' rooms, a step taken to "make the best of the plan, considering the original sloped ceilings and small windows," says architect Meg Graham, a principal at superkül.

To update the master bedroom, they went a step further and built a new addition to the second floor that extends 17 feet beyond the third-floor exterior wall, creating 420 square feet of new space on what was formerly roof, over the living room.

Building the new volume let the team make use of the house's existing framework and foundation, while incorporating the creature comforts the couple requested within energy-efficient new walls.

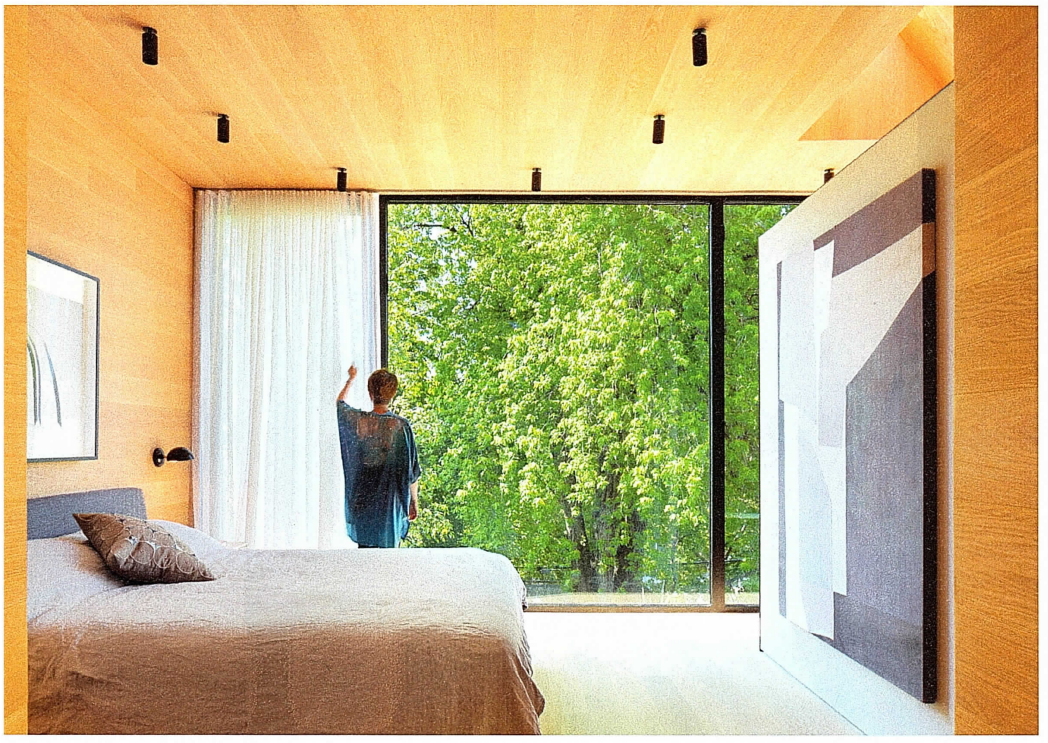
As the chief beneficiary of the renovation, the master suite got a walk-in closet, soaking tub, and an

OPEN PLAN Superkül used a nearly 10-foot-high partition to create a modern, spacious bath (opposite) and master suite (above) to complement a classic house (left).



SECOND-FLOOR PLAN

1 LIBRARY
2 HALL
3 BEDROOM
4 BATHROOM
5 WALK-IN CLOSET





WONDER WALL Building a second-floor addition walled by windows at the back of the house gave the master suite (left) and its en suite bath an idyllic view. White oak floors, walls, and ceilings continue the feeling of nature in the new shower area and walk-in closet (bottom).

entire glass wall.

Superkül's addition gave the clients a luxurious 170-square-foot bedroom with a 110-square-foot bathing area—a cozy refuge for its hard-working occupants. The new wall of windows is composed of argon-filled glass units for thermal insulation. Of course, it brings in an abundance of natural light.

In a dramatic engagement with nature, the freestanding en suite tub was left open to the bedroom and its expanse of glass. A nearly 10-foot-high partition, covered in handmade Moroccan tile on the bath-facing side, screens it from the bed. For an additional connection to the outdoors, architects positioned a 1-by-3-foot skylight above the tub for stargazing and to serve as an additional source of daylighting.

The lively patterned tile on the partition continues on the floor, to form a wet zone underneath the tub. The bed-facing side of the divider displays the large art piece, *Pipe Dreams*, a dye-on-linen work by Colleen Heslin.

With no walls in the way, both the bathing and sleeping areas enjoy sweeping views of the neighborhood and parkland beyond. "The client wanted a clean, natural palette in a calm, beautiful space," says Graham.

Mission accomplished. *Tanisha A. Sykes*

credits

ARCHITECT: superkül – Meg Graham, Andre D'Elia, principals; Deborah Wang, senior designer; Wendy Wisbrun, associate

ENGINEERS: Blackwell (structural); Bowser Technical (mechanical)

GENERAL CONTRACTOR: Derek Nicholson

SIZE: 665 square feet

COST: withheld

COMPLETION DATE: February 2017

SOURCES

TUB & CIRCULAR MIRROR: Agape

FIXTURES: Dornbracht

WOOD PANELING/FLOORING: Moncer

TILE: Popham Design

WINDOWS: Reynaers

LIGHTING: Delta Light (downlights); Apparatus Studio (bathroom wall sconce); David Weeks (bedside sconce)

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What's Cooking in 2018

Extra capacity and function mark these new products, most of which will be unveiled at this month's Kitchen and Bath Industry Show.

By Kelly Beamon



Lexington Collection

A broader heating area to spread warmth efficiently over towels and robes is the innovation behind MrSteam's new line of towel warmers. Four offerings in the Lexington Collection, including the slatted design of the WX41 (shown), feature a 24-hour digital timer and can be operated using the company's proprietary iSteam remote-control app.
Mrsteam.com



Vanity-Height Cabinet Pullout

This pullout organizer with compartments for grooming tools and toiletries, by Hardware Resources, expands its line of built-in storage solutions. At 18 13/16" deep and 19 7/8" tall, it fits in standard base cabinets and adds roughly 450 square inches of storage across its three shelves. The organizer also features the company's patented "No Wiggle" technology for smooth operation. It comes fully assembled for easy installation.
HardwareResources.com



Pivotal Single-Handle Highrise Pulldown Faucet

Delta's latest pulldown touch faucet combines the company's patented diamond-coated ceramic cartridge and water-saving 1.8 gallons-per-minute flow with a sleek design in stainless steel with a black finish. It's activated by touching the spout, hub, or handle, and has an LED indicator light to signal changes in the water temperature. The 3/8" PEX supply tubes facilitate installation.
Deltafaucet.com



Four-Door FreshZone Plus French Door Refrigerator

Dacor is introducing this 23½-cubic-foot unit in a 42" x 25" version for a built-in appearance when installed behind frameless custom panels, and a 41½" x 24" version, when concealed behind overlay-style cabinet doors. The freezer also features French doors that open at standard base-cabinet height. Inside, it has a stainless-steel interior, dual-door mounted Wi-Fi cameras for remote inventory via the Dacor IQ app, and zones that convert from freezer to refrigerator on demand. The FreshZone measures 41¼" x 24 7/16" x 83 3/8."
Dacor.com



GrohTherm SmartControl

Grohe is expanding its line of SmartControl shower-control wall plates with a series of trimmer designs to accommodate controls for up to three shower fittings from a single low-profile panel. Push-and-turn technology lets users operate the showerhead's and hand shower's different spray patterns, as well as the water-flow rate. Chrome or white finishes are available.
Grohe.us



Franke Chef Center

With this new undermount sink system, Franke is placing storage, work space, and a range of useful accessories right inside the basin for an easy-to-clean prep zone. The 9"-deep basin comes with seven accessories, ranging from a glass cutting board to a colander to removable antimicrobial compartments that can function as ice buckets, compost bins, and utensil storage. The unit measures 18⅞" by 33⅝".
Franke.com



Professional Series

Bertazzoni is expanding its Professional Series with a 36" range that features 19000 BTU brass burners on the cooktop and dual horizontal convection fans in the 6-cubic-foot oven. Available in a stainless-steel finish and in five colors.
Bertazzoni.com



Luv

Duravit partnered with Danish designer Cecilie Manz to create Luv, its latest line of bathroom furnishings. Manz, just named Maison et Objet Designer of the Year 2018, intended for Luv's freestanding vanities to resemble "a bowl on a table." They range from the 52⅝" x 22½" unit, shown, to one that's 25¼" x 17¾", and a double vanity measuring 68¼" x 22½." Luv washbowls come in 31½" and 23⅝" widths. A range of countertop options is also available.
Duravit.us



Move It!

School buildings can encourage children to be more physically active, helping develop their bodies and their brains.

By Katharine Logan

BRAIN POWER is physical. Just as exercise builds a child's muscles, bones, heart, and lungs, so it builds the brain, fueling cells with oxygen, nourishing connections between neurons, and supporting new neuron growth. Yet only one in three American children is physically active daily; fewer than one in seven walks or bikes to school; and, according to a new study from Harvard University's T.H. Chan School of Public Health, over half are on a track that will lead to obesity by the time they are 35. Schools, where kids spend up to half their waking lives, represent a major opportunity to develop children's brains, and their health overall, by getting them moving.

Movement doesn't necessarily mean sports or athletics. Research shows that activities of low to moderate intensity can affect overall energy levels and help prevent weight gain; just reducing the amount of time spent sitting, and breaking up that sitting time with movement, makes a difference. Even so, a 2011 study of activity levels among 8- to 11-year-olds over the course of a school day found they were sedentary for 70 percent of class time, including gym class, and most were also inactive during recess and lunchtime. Aiming to do better, three recent K–8 schools—Discovery Elementary in Arlington, Virginia; Northland Innovation Center for Students in Academically Gifted Education (SAGE) in Gladstone, Missouri; and St. Hilda's & St. Hugh's School in New York—use design to foster less sedentary behaviors.





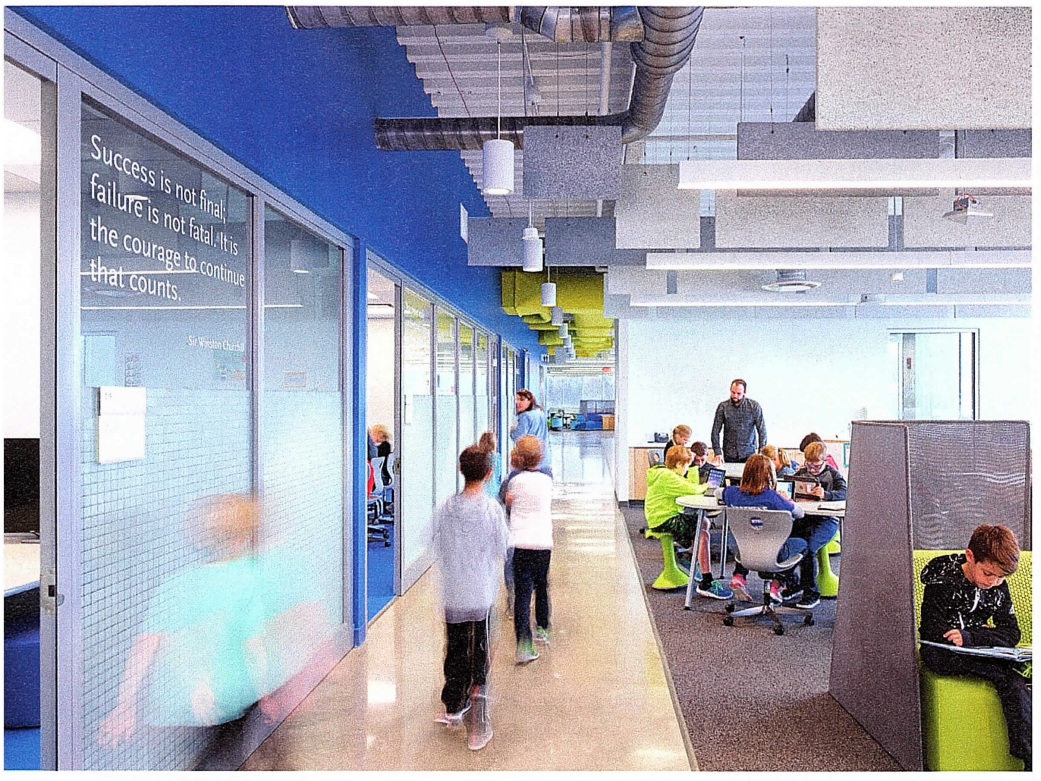
BOOK NOOKS At Discovery Elementary (above) in Arlington, Virginia, a "hedge" (opposite) includes child-size cubbyholes that can be occupied in numerous ways. Students can travel between floors on a slide (right).

Discovery Elementary, a 98,000-square-foot net zero energy school, implements lessons from the experience of its architect, Charlottesville-based VMDO, on an earlier, health-driven project, Buckingham County Primary+Elementary Schools, in central Virginia. That project gave rise to Healthy Eating Design Guidelines for School Architecture, adopted by the Centers for Disease Control and Prevention and, more recently, the complementary Physical Activity Design Guidelines for School Architecture.

The Physical Activity Design Guidelines provide a set of evidence-based objectives and strategies organized according to 10 domains, including siting, massing, various progam areas, wayfinding, and furniture. "Developing the guidelines helped us to recognize all the different spatial domains that could be rethought in terms of active design," says coauthor of the guidelines Dina Sorensen, former project designer at VMDO and now K–12 education design leader at DLR Group. "It helped us understand how promoting activity across every space could transform a school into a new type of health-delivery system."

At Discovery, in order to preserve playing fields and open space, which are a valued community asset, on the 25-acre site (it also shares them with an existing middle school), designers set the two-story building into the side of a hill. This parti results in a compact, vertical scheme with multiple changes of level, which the design exploits to foster "active navigation," one of the domains of the Physical Activity Design Guidelines, including strategies like prominently located, visually appealing stairs. "There are a lot of reasons teachers might choose not to move very often—usually to protect curriculum time," says Sorensen, "so this idea of moving as a default behavior, encouraged by some amazing kid-centric features throughout the space, is very powerful."

Immediately inside the main entry, the floor level steps down 30 inches; a guardrail-height millwork partition known as the "hedge" separates the two levels, enclosing the





COLOR CODED Instead of relying on solid walls and partitions, designers differentiated spaces at the SAGE school (left and below, left) in Missouri, with bright hues and changes in floor finishes.

kindergarten zone's "backyard." The hedge, which is up to 4-feet deep in some places, is populated with child-size cubbyholes that kids can discover, claim, and use in various ways. The architects expected these opportunities to climb up, crawl under, slide down, or adopt an unusual posture while working to be "just a little-kid thing," says Wyck Knox, a principal at VMDO, but even fifth graders have started dropping by the hedge when the kindergarten class is outside.

Throughout the building, features such as seating steps for story time, entire walls that serve as Scrabble and Lego playing surfaces, varied and adaptable furniture, and flexible spatial configurations provide opportunities to incorporate movement into the day. Choosing between a grand stair and a yellow slide between one floor and another is not a privilege or reward, "it's simply a choice," says Erin Russo, the school's principal. A priority for Russo is encouraging the school's teachers to use the building as intended: to take story time upstairs in Cloud Commons (a bright, open multilevel space that can serve as an informal amphitheater or as a group workspace), to make a presentation in a collaborative workspace known as the Blue Sky Studio, or to let kindergarteners find their own reading spot in the hedge.

Knox considers Discovery's re-envisioning of the classroom concept to be one of the school's biggest successes. A variety of specialized, customizable, and flexible areas, linked by programmable open spaces and clear lines of sight, increase the options for "active classrooms," another of the guideline domains. Transparency, achieved with glass partitions instead of solid walls, enables teachers to keep an eye on children working on their own in adjacent spaces, effectively lowering the student-to-teacher ratio at times. The strategy has also allowed the school to dispense with hall passes and let the kids move around the building independently. "The concept of the classroom is no longer bound up by four walls," says Knox.

Transparency and spatial flexibility are significant features of the Northland Innovation Center for Students in Academically Gifted Education (SAGE), which won a 2017 Excellence Award from the Center for Active Design, a health-focused leadership and advocacy nonprofit. Inserted into a newly constructed office building in Gladstone, the 33,800-square-foot SAGE Center supports active, student-led, participatory learning: students spend only 5 percent of their school day in structured lecture-style classes, with the rest used for researching, creating, performing, and socializing.

"The notion of kids' following their passion, or path, marries nicely with the principles of active design," says Steven Turckes, PreK–12 global practice leader at the Chicago office of Perkins+Will, designers for the project in association with Leawood, Kansas-based Hoefer Wysocki Architects. "Sitting inactive in a chair listening to a teacher lecture all day is one way of learning, but we would argue it's not the best way. SAGE gives kids the space and the freedom to move, to explore, to experience, and to collaborate."

The two-story facility, serving 250 K–5 students daily, consists primarily of open studio spaces in which focus areas are defined by rich colors and separated by glass partitions, or walkways marked with a change of floor material. Visual connections between neighboring learning environments encourage interdisci-

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plinary thinking as students move throughout the space and engage a variety of settings over the course of a day.

As at Discovery, the furniture at SAGE was selected to foster a more dynamic environment: movable tables and chairs allow children and teachers to configure spaces as needed, chairs with a V-shaped back are equally functional facing forward or backward, stools designed to rock promote active sitting, padded seating-blocks double as work surfaces. Enabling these types of micro-movements turns sitting into an activity, and aligns with research findings that students learn more effectively when they're able to move.

Turckes credits North Kansas School District's then-superintendent Todd White (now with nearby Blue Valley School District) with making this paradigm shift possible. White provided the leadership to accomplish change: facilitating the necessary conversations, leading tours of precedent-setting facilities, and organizing workshops, such as one with an educational-furniture specialist,





ROOFTOP RECESS At St. Hilda's & St. Hugh's in New York, the architects designed a variety of outdoor environments to suit vigorous and quiet play (opposite, top). Inside, they created a small gym with a climbing wall in space reclaimed from mechanical services (opposite, bottom). Stairs (above) are made inviting with the inclusion of daylight and a quote from the Declaration of Independence.

so teachers could experience the options and discuss their use in a range of settings.

Transforming schools to promote mobility among students necessarily promotes it among teachers too. Shifting from self-contained classrooms to a more fluid environment has helped to increase camaraderie and support a level of collaboration that, SAGE's teachers say, didn't previously exist. The ability to monitor and facilitate the children's learning across a variety of workstations in the open space also enables teachers to observe one another's classes more easily, and to share ideas. Facilities for staff include a planning room with a large table and kitchenette, and a meeting room with acoustical privacy. But without self-contained classrooms or even designated desks of their own, "the environment has challenged the school's teachers to reconsider how they teach," says Turckes. "It's created a freedom that they just didn't have before."

Maximizing opportunities for students (and staff) to be more active in their indoor learning spaces improves the environments where they spend most of their time, but outdoor learning and play opportunities are also essential for children's physical well-being, and their intellectual and social development. "There's more and more focus on making these larger spaces positive from a mental health perspective," says Sara Grant, a partner at New York–based Murphy Burnham and Buttrick Architects (MBB), "and on the need to support healthy interactions by designing them as warm, welcoming, and nurturing."

In a 20-year series of projects at St. Hilda's & St. Hugh's School, MBB has been transforming a utilitarian structure in Manhattan's Morningside Heights neighborhood into a building more sympathetic to the pre–K through eighth-grade school's holistic, child-centered philosophy. One of these projects, a collaboration with landscape architecture firm RKLA Studio, is a rooftop play deck for the lower school (pre–K to grade three). Not just an area for outdoor activity (which in itself is something of an achievement on this tight urban site), the design uses materials and spatial composition to offer variety and choice, appeal to multiple senses, and generate a feeling of security and comfort.

The deck comprises three separate zones, each with a distinct character. A ball-play area allows children to make the big, exciting moves they can't make indoors. A climbing zone includes fixed and changing elements that encourage adventurous and imaginative activity. A garden incorporates a planted wall and seating, and opens to views of the Hudson River; sheltered by a slatted screen from the more vigorous uses in the other two spaces, this "room" serves as a protected area for outdoor classes and quiet play.

One of the challenges that constructed urban play areas face is how to reintroduce nature and renewal so the space doesn't get stale. All three zones of St. Hilda's & St. Hugh's play deck incorporate plantings; their colors, scents, and textures change with the seasons. The active ball zone incorporates banners—printed with clouds, for example, or an abstraction of trees—that can be changed to transform the character of the enclosure. Exhibits in the climbing zone are also switched out periodically: an airplane fuselage, a teardrop trailer, and a tiny tugboat are examples of real-world objects that have been stripped down and made safe for children.

The success of the play deck and other active-design interventions at St. Hilda's & St. Hugh's—such as a daylit stair limned with a quote from the Declaration of Independence, a climbing gym and dance studio in found space reclaimed from building services, and a range of immersive, hands-on learning environments that pre-date but nonetheless exemplify the active-classroom guidelines—is evidenced by data showing that students at the school take an average of over 8,300 steps during school hours alone, with the lower school children averaging over 10,700 steps.

Notwithstanding this success, Grant cautions designers against focusing too narrowly on physical activity, and encourages instead a more holistic approach to student health and well-being. That's an idea that resonates at Discovery Elementary too: activity was a secondary motivation for many of Discovery's design features, says VMDO's Knox. "The primary motivation was the kids' joy and happiness." And it's the same for the activity-promoting features at SAGE: "What we're seeing," says Julie Alsobrook, retired director of the program, "is that kids are happier." ■

Katharine Logan is a designer and writer focusing on architecture, sustainability, and well-being.

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To earn one AIA learning unit (LU), including one hour of health, safety, and welfare (HSW) credit, read "Move It!," review the supplemental material found at architecturalrecord.com, and complete the quiz at continuingeducation.bnpmedia.com or by using the Architectural Record CE Center app available in the iTunes Store. Upon passing the test, you will receive a certificate of completion, and your credit will be automatically reported to the AIA. Additional information regarding credit-reporting and continuing-education requirements can be found at continuingeducation.bnpmedia.com.

Learning Objectives

1 Discuss the importance of physical activity for developing bodies and brains.

2 Describe the strategies outlined in the Physical Activity Design Guidelines.

3 Explain how the designs of the three featured buildings encourage students to move during the course of the school day.

4 Describe design strategies for encouraging outdoor activity for schools on tight urban sites.

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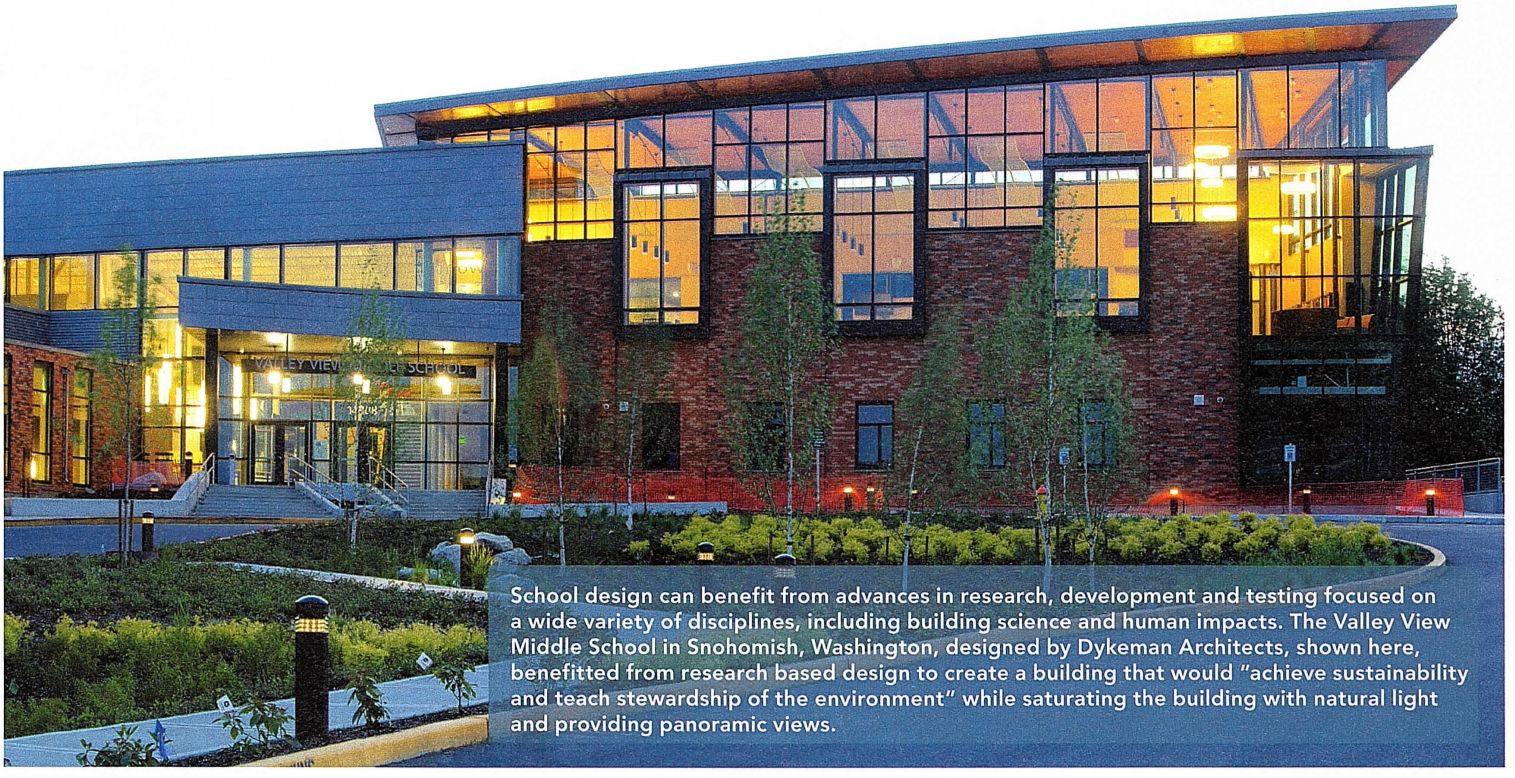
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Architecture for Education

Using research-based information to make better design decisions

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School design can benefit from advances in research, development and testing focused on a wide variety of disciplines, including building science and human impacts. The Valley View Middle School in Snohomish, Washington, designed by Dykeman Architects, shown here, benefitted from research based design to create a building that would "achieve sustainability and teach stewardship of the environment" while saturating the building with natural light and providing panoramic views.

Designing K–12 learning environments is a task of considerable complexity requiring a great deal of information gathering, analysis, and synthesis to produce a successful final design. Some of the information is based on the stated needs and desires of a school client board, staff, or regulatory and funding authority. Other information is based on the physical parameters of an existing site or building that is the focus of a new or updated facility. But there is an additional source of information that can be highly valuable in making informed decisions on the ways that a school environment can be successful, namely independent scholarly research. In a world where information has become the new driver of so much of our activities and economies, research that is vetted and found to be reliable can help clarify facts from opinions and offer insights into multiple aspects of architectural design. As such, useful research is not limited just to that done in architectural schools or firms, but from many disciplines of art, science, technology, health, and others. Since architecture has always reflected, and often contributed to the culture of a particular place and time, it is no surprise that all of the disciplines and forces of our current culture come into play in the design of new or renovated schools today.

Recognizing the multiplicity of influences on school design, The American Institute of Architects (AIA) Committee on Architecture for Education (CAE) has been formed with more than 8,000 architects and allied professional members. It is a knowledge community and think-tank group committed to "enhancing educational facilities through thoughtful, research-based, and collaborative programming, planning, and design." As part of this mission, the AIA CAE has created a Research Subcommittee to help bridge the gap between practice and research. The goal is to provide AIA members and other design professionals with a "national interdisciplinary working group focusing attention on the influential interactions, dynamics, and cultural influences that occur within and around physical learning environments in which the learner, teacher, content, and affordances interact within the context of the built environment." In essence, they are seeking to draw from a broad pool of information to provide practitioners engaged in

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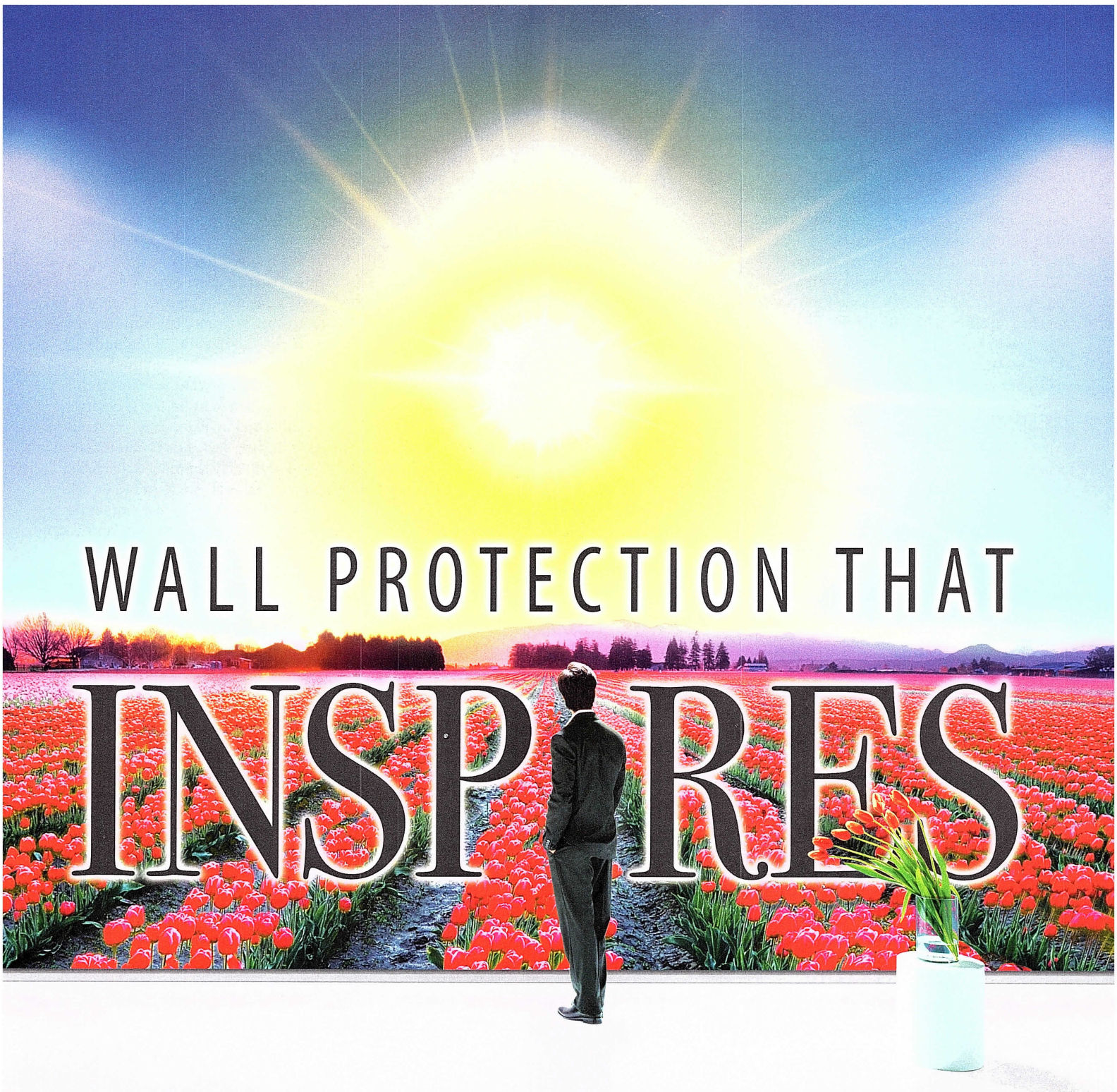
Learning Objectives

After reading this article, you should be able to:

1. Identify the significance of using independent research as a basis for making design decisions in schools.
2. Assess the health and safety performance aspects of a variety of design characteristics and materials as they relate to durability and sustainability.
3. Explain the importance of making design decisions that have positive impacts on student performance, indoor air quality, and health.
4. Determine ways to incorporate the design principles presented into buildings that are sustainable and high performing as shown in case studies.

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school design with some reliable research upon which to justify and base design decisions. This approach, often referred to as research-based design, means that architects can be kept up to date with the latest information in a manner that allows us to translate research knowledge into built conditions. (Learn more on the CAE Research webpage.)

Toward the end of improving communication, the AIA CAE Research Subcommittee has launched an effort with Learning by Design and published its first issue of *Dialogues* in fall of 2017. This succinct document provides five summaries of research projects that provide fresh perspectives connecting "health and learning through co-creative design processes, physical activity, multisensory experiences, and encounters with space as a teaching tool." The Subcommittee co-chairs say, "With these touchstones of understanding the deeper intersections between environment and learning, we can begin to nourish expansive conversations around the planning, building, and evaluation of school in the future."

Using work of this research subcommittee for inspiration, this course will address seven common areas of school design and seek to question the basis for design decisions around them. In essence, it is intended to be a call to action for designers to question if they are using research in their design to keep their designs fresh and current or making decisions purely based on quickly fading traditions or past practices.

DAYLIGHT AND GLAZING

One area that is well known for incorporating research-based design is the use of natural daylight to enhance the effects on people in buildings, particularly schools. Numerous studies have indicated that students perform better when they are in classrooms and other school spaces that contain natural daylight. The design challenge comes in the form of not only controlling that daylight but also in finding the balance between appropriate lighting and energy usage. Since any window or glazed opening will allow heat as well as light to pass through it, the treatment of glass has received considerable research attention.

Research, development, and testing have been done by a variety of organizations including institutions, third-party agencies, and manufacturers to identify coated glass products that can deliver high light transmittance while reducing solar heat gain. Such products are ideal for creating learning spaces with abundant natural light while helping to manage heating and cooling costs and the need for artificial lighting. Specifically, glass coatings can be tailored to achieve the right combination of thermal U-factor, solar heat gain coefficient (SHGC), and visible light transmission (VT). So, for example, a solar heat gain coefficient of 0.25 or less may be required in warmer climates, which would commonly mean a large loss in VT. Through research and development, coated glass products are now available that achieve SHGC of 0.23 and corresponding VT up to 68 percent. The color of the primary glass can be selected to suit a particular aesthetic and performance level with a variety of float glass colors, including low-iron (very clear), light gray, and light blue. The neutral appearance of the low-iron glass with a coating is the most similar to clear uncoated float glass, which has a normal green tint from the manufacturing process. Selecting the best version of such coated, insulating glass can help a project earn certification from green building rating systems such as LEED, the Living Building Challenge, and the WELL Building Standard.

Brian Schulz is a product manager with Guardian Glass North America. He observes, "What used to be a trend in school construction—maximizing daylight—is now the standard, and now we must deliver products that bring abundant natural light into spaces while delivering on strict energy-performance requirements. Coated glass products give architects and designers a wide selection of performance and aesthetics to meet even the most complicated specifications." From a designer's perspective, Denis Henmi, FAIA NCARB, president of the firm Kwan Henmi, concurs. "The exterior appearance of the glazing is of top priority," he says. "We go through a very careful selection process balancing the aesthetics and performance characteristics. Maximizing views and natural light are some of the top goals during the design process. Coated glass has played a vital role in our ability to maximize glazing, energy performance, and visual appearance."



© Ziegler Cooper Architects/Guardian Glass

Incorporating high-performance coated glass, the John Cooper STEM School in Houston designed by Ziegler Cooper Architects includes a dramatic glass entrance that incorporates eye-catching aesthetics with a high level of light transmission coupled with low solar heat gain. This glass performance helps architects meet the most stringent energy codes in North America without sacrificing appearance.

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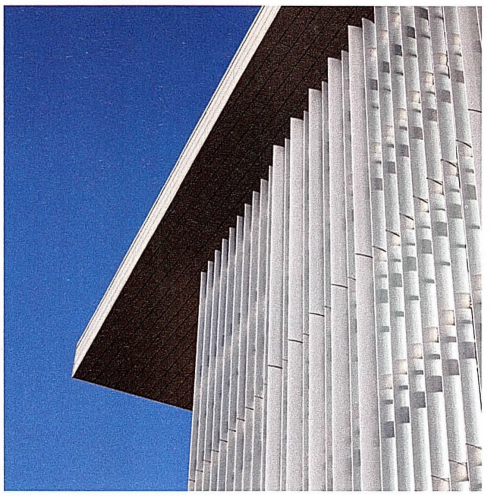
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Exterior sun shades can be incorporated in a variety of ways on a building, including horizontal or vertical installations. Properly designed and installed, they can reduce glare, improve the quality of daylighting, and still allow for views out of windows.

SUN CONTROLS

While allowing natural daylight into a building is proven to improve well-being and productivity in schools, excessive daylight can lead to uncomfortable glare and, depending on the compass orientation or time of day, could add more solar heat gain than desired. For these reasons, providing a solution for controlling or directing daylight into interior spaces is important for a successful outcome. Research indicates that there are different design options that can yield the sought-after results.

Exterior Sunshades

Exterior sunshades have become a common and popular design solution, as they let filtered light into a building while still allowing occupants to see out. They are particularly attractive to architects because exterior sunshades are fully customizable to suit the design of a particular project or facility. Different components are available to create a complete system, including an array of patterns, hues, textures, and lighting. "Exterior sun shade systems provide lower energy costs and reduce glare by allowing filtered light to enter a building," says Eric Sposito, national sales manager with Construction Specialties. "They can be used to create unique architectural designs with intricate patterns, sleek textures, vivid colors, and even LED lighting. No matter how complex the architectural facade may be, an engineered sun shade solution is possible."

Cantilevered and suspended sunshades typically project horizontally outward from the building facade, and as such are well suited for southerly facing facades. The location and angle of the horizontal bands can be adjusted to suit a project based on specific orientation, latitude location, and facade conditions. This type of sunshade is also ideally suited for installations where loads from wind and snow need to be distributed over a larger area and back to the buildings structural support system. Instead of cantilevering outward from the building, exterior sunshades can alternatively be suspended closer to the facade in either a horizontal or vertical format. This configuration is particularly well suited for east and west elevations, where low sun angles make sun control challenging.

For installations where daylight from any direction is intended to offset the use of electric lights, something is needed to help distribute the daylight evenly into interior spaces such as classrooms. Interior light shelves have been successfully employed to do just that, particularly when combined with upper or transom style windows. These light shelves intercept the upper light and redirect it deeply into the building. In this way, they reduce heat and glare, allowing students to sit adjacent to windows comfortably and productively.

When properly designed, exterior sunshades allow filtered light to enter interiors and let occupants see out. Manufacturers of exterior sunshades can also demonstrate how their products can enhance building designs while lowering its environmental impact. For some though, manufacturing the product is just the beginning. When architects are looking for an exterior sunshade solution, certain manufacturers can also provide expert guidance and engineering support in the final design and fabrication of products directly suited to individual projects. Architects can work with product engineers to design a custom system that is code compliant and structurally sound, regardless of how complex the final design may seem.

Integrating exterior sun shades into a building can be addressed through custom design options available. BBH Design Associate Tzu Chen, AIA, specified horizontal sunshades at Wake Technical Community College. He comments, "Seeing the final product, we definitely feel that the sunshades blend well with all of the [building's] components. The abruptness of the transitions was a consideration, but it worked out nicely."

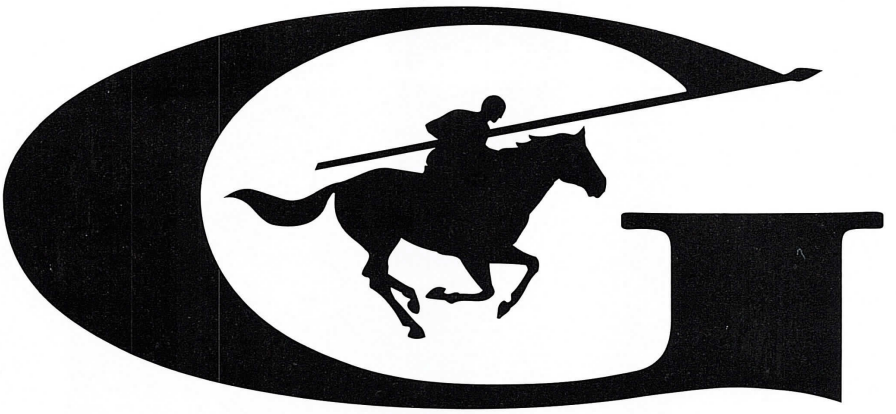
Interior Sun Shades

Controlling daylight and glare from the inside of a building is a design option in many cases for school buildings. Roller shades in windows have commonly been used, which allow a great deal of flexibility and control. Fully open, they can allow for full penetration of daylight and clear views to the outside for students. For times when solar control is needed to reduce glare, they can be closed fully or partly, with options available for the shade material to be either opaque or textured to intentionally obscure light transmission and visibility. In some cases, it may be desirable to provide both



Photo courtesy of Inpro

Interior solar shades can reduce glare while still providing daylight and views. The type of fabric used can be selected for durability, aesthetics, and solar reflectance to help reduce energy costs for cooling.



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options in a single installation. The textured choice still allows diffused daylight to pass through, but the fabric appearance of the shade reduces the total light, thus reducing glare and producing a favorable light quality inside the building. An opaque or room darkening choice can be helpful for times when audio visual equipment is in use, which requires a lower ambient lighting condition.

Interior sun shades can help with the rejection of solar heat and have a positive impact on reducing energy needs for cooling as a result. For example, independent research using computerized energy models run for a medium-sized, two-story building in the Midwestern United States compared a baseline building with no window shades to a building design that incorporated interior sun shades. Different types of shades were modeled that ranged in the percentage of openness in the fabric (i.e., less openness equals more shade fabric per square foot). The results of the modeling and analysis showed that annual energy savings related to space cooling, heat rejection, and ventilation fans could be realized between 5 to 9 percent. These savings were attributed to the ability of the fabric to reflect solar heat and keep the building from overheating on sunny days. Hence, this data shows that it is possible to provide daylighting while still having a positive impact on overall energy use in a building.

Any product used on the interior of a school building needs to be durable in order to be practical. In the case of interior window shades, this comes in two forms. First is the shade or curtain material itself, which in this case can be specified from available, nonorganic, resilient fabrics. Second is the roller mechanism, which can be provided by manufacturers in a durable, concealed housing. The operation can be cordless to further ensure durability and create a cleaner, safer operation.

THERMAL COMFORT

When it comes to creating a school building that is thermally comfortable, accommodating to daylighting and sun, and efficient to operate, the focus often moves from a well-designed building envelope to an efficient cooling and heating system. While mechanical engineers are quite good at figuring out the sizing, efficiency, and economics of different systems, architects are usually more concerned with flexibility in design, quiet operation, availability of indoor unit styles, and being able to modify the systems as needs change during the design or life cycle of the building. From all points of view, variable refrigerant flow (VRF) systems have become a popular choice to provide educational buildings with design flexibility and efficient, personalized comfort for occupants. Because they can be customized and easily zoned to provide cooling or heating simultaneously throughout a building, they meet the needs of a wide variety of spaces, including classrooms, lecture halls, administrative offices, athletic facilities, and more.

Photo courtesy of Studio 804



Variable refrigerant flow (VRF) systems can be used in very energy-efficient buildings to provide thermal comfort and integrate with other mechanical systems within a building.

Design teams who have incorporated two-pipe VRF systems have found them easy to design, while facility operators find them easy to manage and modify as building needs change. Routine maintenance is minimal and limited to indoor unit filter changes and outdoor unit condenser coil cleanings. With this ease of design and installation, minimal required maintenance, superior energy efficiency, and long-lasting equipment, the systems' total life-cycle costs are less than many others. More importantly, the capability of precise zoning gives individual control to teachers and administrators, keeping virtually everyone comfortable and content. From an operations standpoint, cooling and heating can be utilized in areas that need it, without paying for those that don't.

The quiet nature of VRF systems makes them ideal for environments like libraries, classrooms, and study halls, where students need to focus without the distraction of noise. Indoor units operate down to 19 dB(A), quieter than a whisper, and outdoor units featuring high-performance compressors operate at levels as low as 58 dB(A). Energy recovery ventilators (ERVs) can also be applied to exhaust outside air and rid the school of toxins, odors, bacteria, and other potentially harmful contaminants. They also improve HVAC system efficiency by preheating or cooling incoming outside air with energy recovered from the exhaust air.

Nichole Watring is the principal at St. Joseph School in Pilot Grove, Missouri, where VRF systems have been successfully installed. She notes, "We have not had any issues with the system, and the teachers and students love that they can control the temperature of their rooms. It's much quieter and more efficient than the previous system. The students especially love the burst of cool air when they come in from recess on hot days."

Kevin Miskewicz, director of commercial marketing for Mitsubishi Electric Cooling & Heating, is always glad to hear success stories like this, as he points out, "We understand the challenges educational facilities face—particularly tight budgets, the need for individualized zone control, and high-efficiency demands. Working together, we can help design the right HVAC system that satisfies their unique requirements."

INTERIOR SPACE FLEXIBILITY

Collaborative teaching and group learning are concepts in education that have received a lot of attention and investigation in recent times. Whether school boards or educators are aware of current research topics or not, they often request architects to consider ways to incorporate spaces that can be flexible and transformed in size and character. Of course, that has to be easy to do and still allow for the spaces to


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function in terms of light, views, and acoustics. After all, the goal is to enhance teaching and learning, not detract from it.

One of the solutions being used increasingly in schools is operable glass walls made of panels that can be easily moved to define smaller spaces when they are closed and larger spaces when they are open. From a learning perspective, this solution allows the creation of defined areas for focused learning or the opening up of larger common areas where multiple students can work together on a range of activities utilizing shared resources, such as technology centers or presentation areas. Not only does this approach offer the sought after variety for student programming, but it also means that teachers can support each other, fostering a better-managed classroom environment. From an overall design perspective, creating such a flexible classroom configuration with operable glass walls can optimize or even reduce the needed floor space within a building envelope, which can translate into reduced construction costs.

Taking this flexible-space approach to the design of school environments can contribute to the following common requests from educators:

- **Variable-sized group work:** Operable glass walls enable separation of smaller groups for discussion, group projects, quiet zones, advanced or remedial work, test centers, teacher assistant-led groups, etc.
- **Multiple concurrent activities:** This approach allows teachers to monitor multiple activities in separated spaces.
- **Outside volunteer space:** When a parent or visitor volunteers in the classroom, they can use this area to work independently with students.
- **Shared resources:** Flexibly accessed glass walls offer common storage space for shared books, supplies, computers, and reduces redundant purchases.
- **Teamwork:** Joining two or more classrooms with shared space allows teachers to configure space to meet their needs, while advanced operating mechanisms allow for quick and easy transformations.
- **Class management:** One teacher can temporarily monitor two classes if another teacher has an emergency or needs a break.
- **Minimized visual distractions:** Use of mixed transparent glazing in the upper portion of the glass wall and opaque glazing in the lower portion allows seated students to be isolated from excessive distraction beyond the wall, while a standing teacher can monitor multiple spaces.
- **Cool off/recovery area:** This offers isolated, private space for behavioral and emotional issues or disciplinary actions.

Photo courtesy of NanaWall Systems



Operable glass walls used in school settings allow architects to create flexible spaces that can meet a variety of educational needs and preserve the light, sound, and control aspects of design.

Architects who have used this approach include John Brown, AIA, partner, Hollis + Miller Architects, who points out, "Connectivity, flexibility, and visibility were all very important concepts in the design of the spaces within our school projects. While we still needed the capability of closing off spaces for more traditional classroom and learning spaces, we also needed to open up the walls to accommodate larger groups, which would then allow for collaboration." David T. Esely, AIA, senior project architect of the same firm, adds, "When closed, very little sound penetrates, which allows for diverse learning opportunities on both sides of the panels simultaneously. When the panels are open, the opportunities within the space transform and can then be tailored to specific instructors' needs and requirements. This is all done with ease, speed, and frequency."

Photo courtesy of Construction Specialties



Doors that are fabricated and treated for heavy use can help with the long-term durability and appearance of school spaces.

INTERIOR FINISH PROTECTION

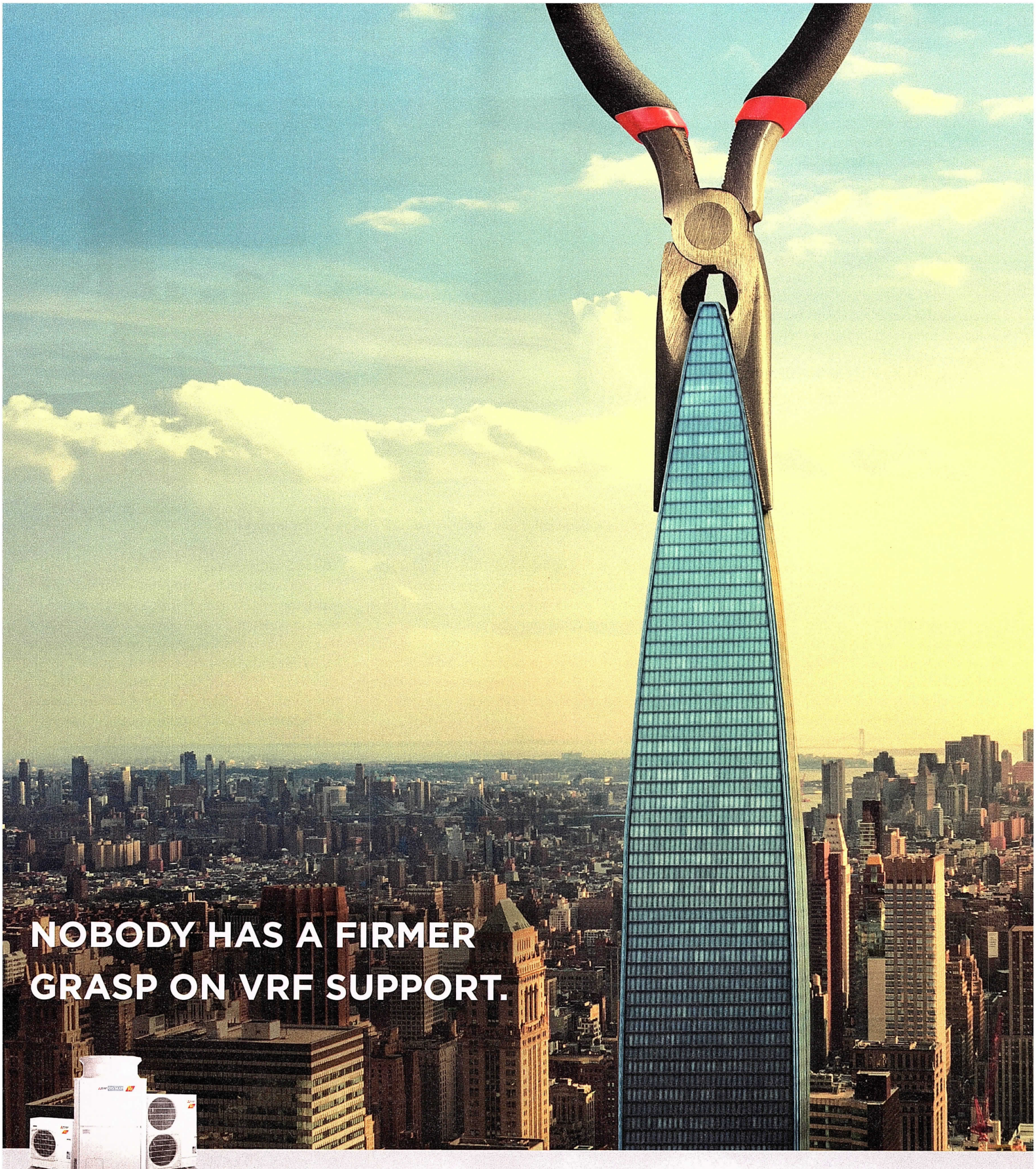
Schools are busy places with a lot of people and equipment moving daily. That means the interior finishes can get rubbed, bumped, banged, or even abused, and they will start to show signs of wear quickly if they are not inherently durable or protected in some manner. In these cases, material research and testing by independent organizations or manufacturers can help inform design decisions.

Interior Door Protection

Interior doors in a school are prone to get a lot of use and even abuse, which means that the materials used in them need to be able to withstand those conditions. Recognizing this need, door manufacturers provide product offerings that are specifically designed to handle these heavy use conditions. They also recognize that the doors need to meet other criteria for performance, such as fire ratings where required, acoustical control, and the ability to be easily maintained and serviced. Beyond performance, the door appearance is also important, so a variety of finishes have become available that allow doors to stand out as features in a design or blend in with the surrounding surfaces. Either way, some offer the option of customized appearances and even artwork or graphics being integrated into the door. Overall, they provide a durable, attractive, code-compliant, long-term door design solution.

Interior Wall Protection

Interior walls are at the forefront of the need for durability in a school. In particular, corners, edges, and other aspects of an interior design are subject



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to wear and tear from moving people or equipment. Adding products specifically designed to protect these areas is common, with many choices of product types, finishes, and colors to enhance, rather than detract from, an interior design scheme. For full wall areas that need protection, there are a number of choices. One is to use wall panels that are mounted over a substrate wall and incorporated into an overall design scheme. The other is to use rigid sheet protective wall covering that is readily available and easy to clean. Such coverings also come in specialty materials for unique or more demanding locations. One of the more creative choices though is the use of printed wall protection. In this case, the protective covering is clear and backed with a choice of standard or custom graphics such as logos, artwork, mottos, or mascots.

Printed Interior Wall Protection

There are occasions when wall protection is needed in a school but there is also a desire to have some printed graphics on a wall. That option is now possible and readily available. "When wall protection is selected that is printed with a design, it is important to recognize that these products are designed first and foremost as a highly durable, long-term wall protection solution that can stand up to years of abuse," says Amy DeVore, business development manager with Construction Specialties. This benefit makes printed wall protection a sought-after choice for schools to control maintenance and replacement costs. But they also provide the ability to showcase visually stimulating imagery, like original artwork, school colors, mascots, or even eye-catching photography. Because artwork is dictated by creative direction, the design options are virtually unlimited. Artwork is printed and installed behind a clear, protective sheet that is all mounted onto the wall.

When specifying such printed interior wall panels, they can be selected as PVC-free and also meet the testing requirements of ASTM E84 Class A/1 fire characteristics. Commonly supplied in 4-foot-by-8-foot or 4-foot-by-10-foot rigid sheets, this product typically installs with a heavy-duty, water-based mastic adhesive and utilizes minimal sheet spacing, caulk, or trims to allow for proper expansion and contraction of the material. This is a break from the status quo of painted walls and metal school lockers, encouraging a collaborative and socially creative environment for students.

Photo courtesy of Inpro



Protective wall coverings in schools can take many forms to provide long-lasting, durable, and attractive design solutions, including digital imagery that inspires.

RESTROOM PRIVACY SCRANTON PRODUCTS

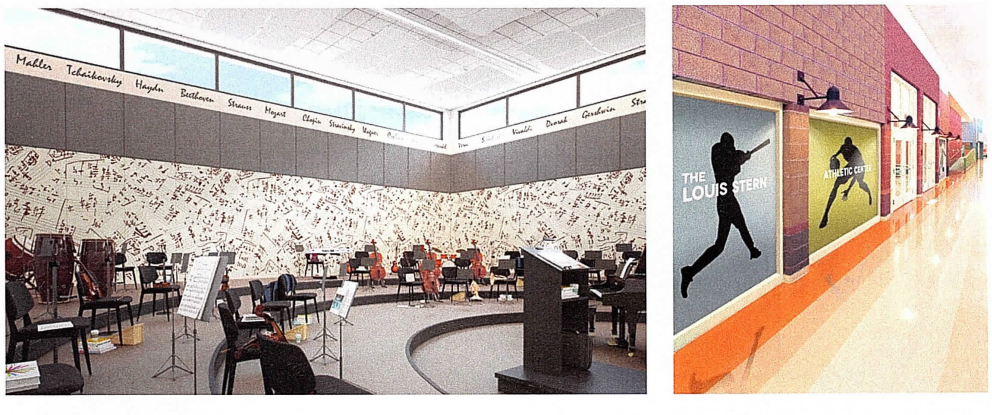
Recent cultural shifts have moved architects and designers to think less about large school restrooms with ganged fixtures and more about providing greater privacy and gender-neutral options. Such creative solutions can defuse otherwise contentious situations and, in some cases, conserve square footage in buildings. This can be manifested in several ways, discussed as follows.

Toilet Stall Privacy

When it comes to designing and specifying toilet stalls, the first thing to realize is that there are options in partition heights and door-closing details that provide varying degrees of privacy and aesthetics. While individual, private restrooms are always an option (often used for gender-neutral accessible restrooms), American designers can learn some effective strategies from our European counterparts.

Comparing American toilet partitions to European-style partitions, the first thing that jumps out is that American partitions have no $^{3}/_{8}$-inch gap between the swinging door and the pilaster that it closes against. European door and pilaster edges are designed to provide a shiplap-style edge condition so the two overlap, thus eliminating any visibility into the stall between the door and the pilaster. The hardware is factor here too. Typical American partition systems use door hardware that creates sightlines on the side of the doors. That's because many of the latching mechanisms use a keeper that typically mounts on the striking pilaster, which requires a gap at the strike side to allow for the door to open or close freely. If a continuous piece is not provided, then there will be a sightline between the door and the pilaster. When switching to a shiplapped system, hardware that mounts on the side of the strike pilaster no longer works. Instead, the hardware must be able to mount separately to latch the door. Some European-style latches also incorporate occupancy indicators due to the fact that it will be almost impossible to see inside the stall to know if it is being used or not. To eliminate sightlines on the hinge side, a continuous hinge can be used that that allows either the door to be in closer contact with the mounting pilaster or uses the hinge itself to fill in the gap.

Photos courtesy of Construction Specialties



Walls can be treated with a clear protective surface that can include printed material on the back to create a fully custom look in school settings, as shown in a band room on the left and an athletic area on the right.



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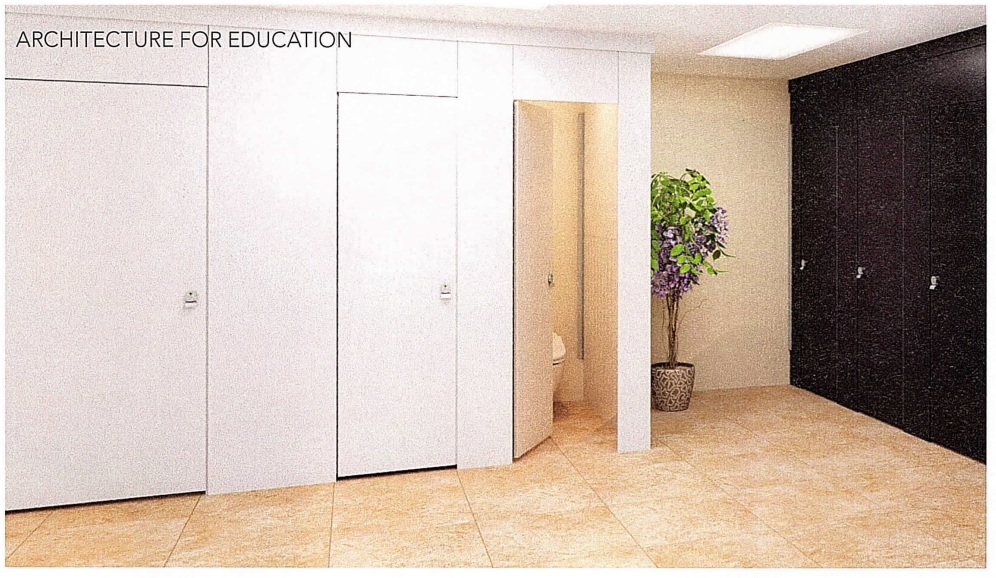
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Toilet partitions no longer need to be limited to the American standard of 55-inch-tall partitions. Instead, products that provide greater privacy and separation are available in 62-inch, 72-inch, and full-height partition sizes.

The next thing that becomes noticeable is the space above and below the door. In the American version, it is common to find the bottom of the door is about 14 inches above the floor, while the top of the door is about 14 inches below the headrail, commonly set at 83 inches above the floor. The standard resulting height of the opaque portion of an American partition is about 55 inches, or just under 4½ feet. In European-style partitions, the partition height can be increased to 62 or 72 inches with corresponding reductions in the spaces above and below, thus assuring greater privacy. It is also common to have full-height partitions that extend from the floor to the ceiling or a soffit above and create "full-room" compartments. These can still be created from partitions using customized sizing between 86- and 112-inch heights. Such prefinished partition systems can save time and money with very quick installations and less on-site construction and finishing if regular construction methods were used.

Part of the flexibility of full-room compartments and taller partition systems is that all common partition materials are still available. These include metal, stainless steel, plastic laminate, phenolic, and HDPE partitions. Each have their own capabilities, strengths, and weaknesses, but HDPE plastic stands out due to its features and benefits for schools. High-density polyethylene (HDPE) is a created from extruded polymer resin with a high strength-to-density ratio and is used in many different types of products. For school restroom partitions, it provides a mid-priced option with the lowest cost of ownership due to its low maintenance requirements. It resists mold, scratches, dents, chipping, rust, oil, and bacteria, thus offering greater durability than some other options. Its finish, with a wide variety of colors and textures, is assured to be a long-term solution since it is produced with a solid color throughout and never needs painting. Because of these attributes, it is common to find it with a 25-year warranty for quality products.

From a school health standpoint, HDPE partitions make a lot of sense too. They are available in low- or no-VOC products that are not a source of chemical off-gassing. Further, they don't require paints or harsh cleaners that may contain VOCs either. Because they are nonporous solid surfaces, mold and mildew growth is resisted, helping with a healthier indoor environment. As such, they can contribute to points under the LEED green building certification program. Some even have earned GreenGuard Certification as administered by UL Environment. Overall, European-style HDPE partitions are proving to be a preferred choice for restrooms, offering extreme privacy, many design options, and innovative features that can significantly upgrade the look of a room and remain healthy and attractive for the long term.

David Casal is the director of sales administration with Scranton Products and has observed this trend, pointing out, "With unlimited design options, HDPE partitions are perfect for creating one-of-a-kind restrooms that really stand out from common designs for innovative facilities. Say goodbye to large sightlines, boring flat doors, and large gaps, and hello to stylish elegance with lots of privacy."

Shower Stall Privacy

School gymnasiums with locker rooms and showers have been common programmatic elements of educational facilities. For decades, the norm has been to provide communal or gang showers in situations like this. The concept made sense since multiple showering "stations" within a given space increased efficiency and capacity while reducing mechanical first costs in new construction. But, as we have noted, times and culture have changed. There are new norms about bathing privacy that have raised new concerns and challenges related to bathroom and shower design. Further, additional risks of serious bacterial infections for athletes and other users put new focus on the design and surface cleanliness of communal shower installations.

One answer for increased privacy in showering is to use separated shower stalls or compartments instead of gang shower arrangements.

▶ Continues at ce.architecturalrecord.com

Peter J. Arsenault**, FAIA, NCARB, LEED AP, is a practicing architect, green building consultant, continuing education presenter, and prolific author engaged nationwide in advancing building performance through better design.* ***www.linkedin.com/in/pjaarch

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PRODUCT REVIEW

Architecture for Education

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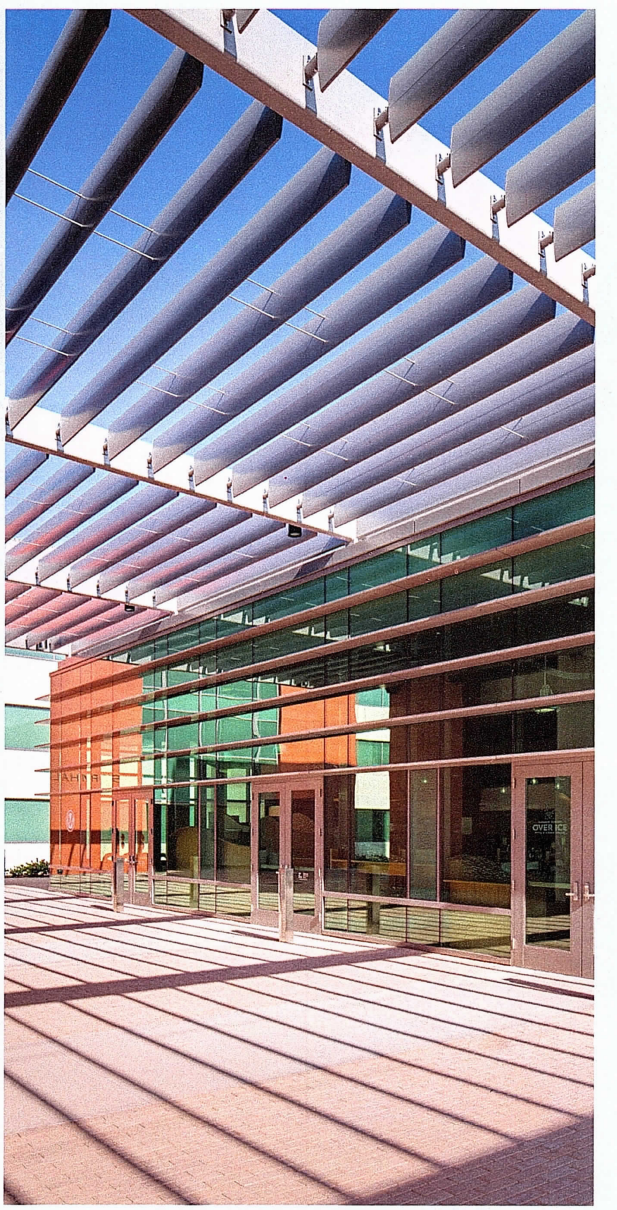


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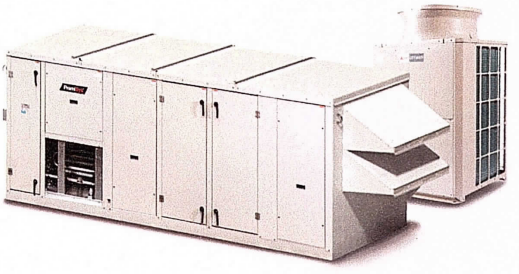
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NanaWall Systems



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NanaWall FlexSpace

NanaWall FlexSpace evolves traditional classrooms into learning environments that are agile and adaptable. Optimizing the limited floor space within the building envelope translates into reduced construction costs. The multiuse spaces also contribute to reduced operating costs, as teachers can share resources and cross-collaborate, creating a more efficiently run classroom.

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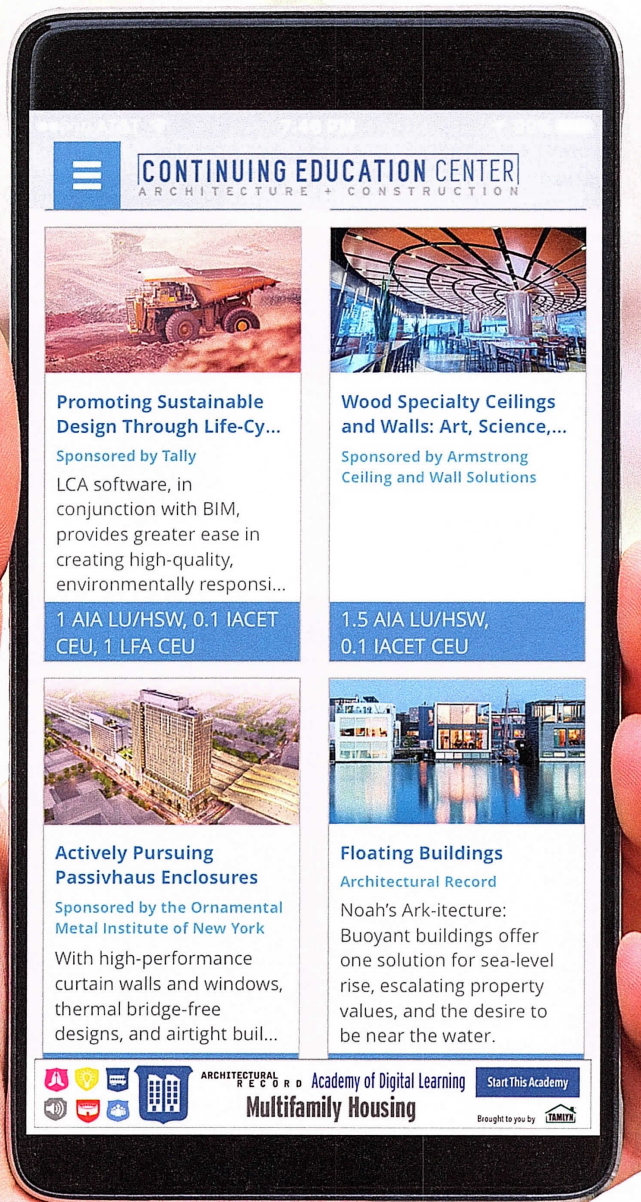
Photo courtesy of Scranton Products

Aria Partitions

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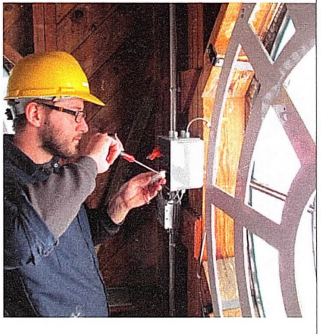
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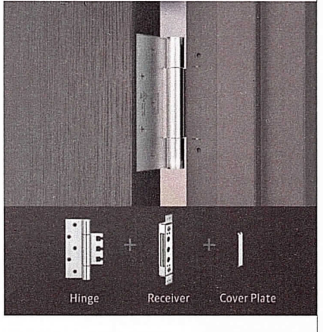
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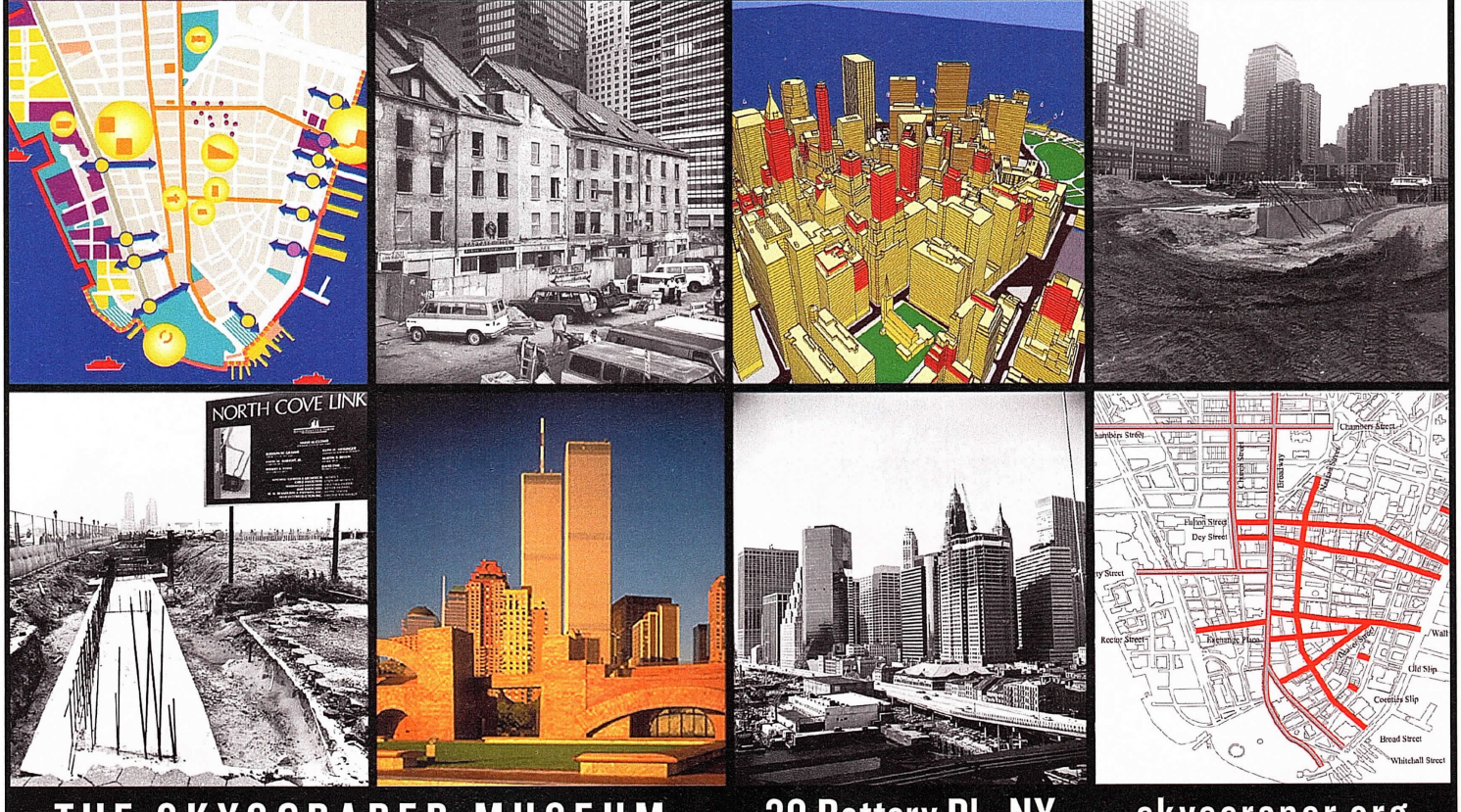
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MILLENNIUM: Lower Manhattan in the 1990s



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New and Upcoming Exhibitions

Lux Helsinki
Helsinki
January 6–10, 2018
The 10th edition of the annual light festival features a series of installations throughout the city. Artistic directors Ilkka Paloniemi and Matti Jykylä curated 11 sites for this year's five-day event. Details at luxhelsinki.fi.

David Zwirner: 25 Years
New York City
January 13–February 17, 2018
For the gallery's quarter-century anniversary, a special exhibition of its artists' work will be shown throughout Zwirner's Chelsea spaces. Selections for the exhibition were based on the artists' role in shaping the gallery itself, with some work specially commissioned for the celebration. Gallery artists include Yayoi Kusama, Gordon Matta-Clark, Alice Neel, and Donald Judd. More information at davidzwirner.com.

Toronto Design Offsite Festival
Toronto
January 15–21, 2018
The largest design event in Canada, the eighth year of the design festival will feature over 100 exhibitions and involve hundreds of artists and designers. Programmed events range from showcases of textile and furniture design to architectural installations and an annual leadership summit for young professionals. Information at todesignoffsite.com.

Michelangelo to Degas: Major New Acquisitions
Los Angeles
January 17–April 22, 2018
A newly acquired collection of 16 drawings from some of the most famous draftsmen in history, such as Michelangelo, Andrea del Sarto, Domenico Tiepolo, Goya, and Degas, will be on display for the first time at the Getty Center. Visit getty.edu.

Lumiere London
London
January 18–21, 2018
Commissioned by the mayor of London, the expanded second edition of the four-day exposition features a series of lighting exhibitions by more than 40 participating artists. Their illuminated designs will be projected onto the city's architecture and urban fabric, at sites including Piccadilly Circus, King's Cross, and Mayfair. Details at visitlondon.com.

Ongoing Exhibitions

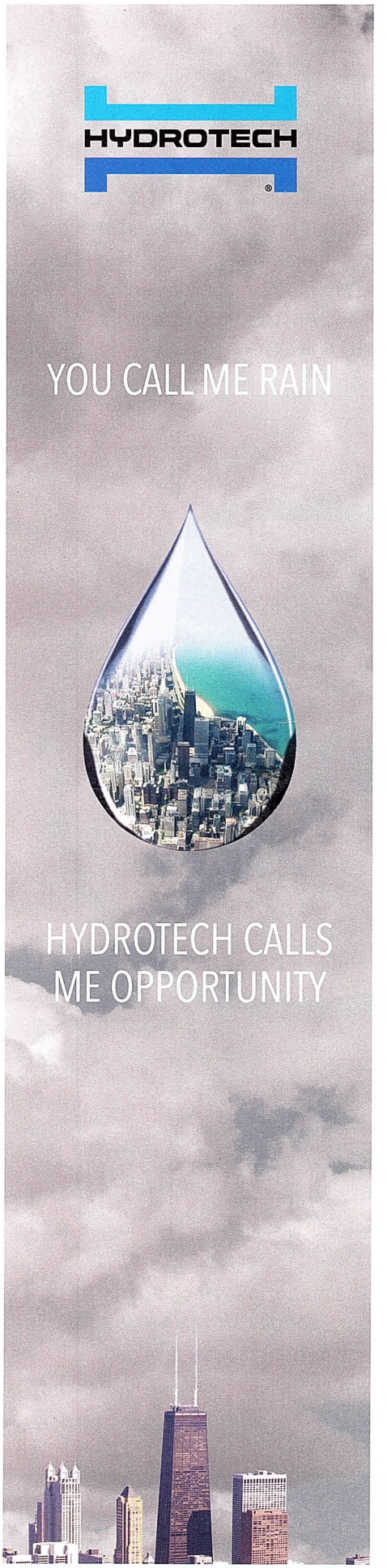
Scaffolding
New York City
Through January 18, 2018
Curated by Greg Barton, with installation design by OMA New York director Shohei Shigematsu, and graphic design by MTWTF, the exhibition explores the different forms and applications of scaffolding, as well as its relationship to architecture. At the Center for Architecture. Visit cfa.aiany.org.

No. 9
New York City
Through January 19, 2018
Designed and curated by architect Frida Escobedo, the exhibition examines the history of a public sculpture series in Mexico City, La Ruta de la Amistad, commissioned for the 1968 Olympic Games. Escobedo focuses the exhibit on the ninth sculpture, by American artist Todd Williams. At Columbia University's Arthur Ross Architecture Gallery. For more information, visit arch.columbia.edu.

The Museum of Failure
Los Angeles
Through February 4, 2018
The 100-piece collection of failed product designs from the 17th century to the present, exhibited first in Sweden, is on display in the U.S. at the A+D Museum. The lineup of failures, curated by psychologist and innovation researcher Dr. Samuel West, include Donald Trump's 1989 version of Monopoly and frozen beef lasagna. Information at aplusd.org.

Ai Weiwei: Good Fences Make Good Neighbors
New York City
Through February 11, 2018
The citywide exhibit by artist and activist Ai Weiwei creates a series of installations using the security fence to examine themes of displacement and migration. Sites in New York include the Washington Square Arch in Greenwich Village, the Unisphere at Flushing Meadows-Corona Park in Queens, and Doris C. Freedman Plaza in Central Park. The exhibit also features images on lampposts and other spaces usually reserved for advertisement. Visit publicartfund.org.

Never Built New York
New York City
Through February 18, 2018
Cocurated by architecture critics Sam Lubell and Greg Goldin, the exhibition features original prints, drawings, models, and installations



CALL FOR ENTRIES

Record Houses

The editors of **ARCHITECTURAL RECORD** announce the **2018 RECORD HOUSES** awards program. Entry is open to any architect registered in the U.S. or abroad. Of particular interest are projects that incorporate innovation in program, building technology, materials, and form. Projects must be built and inhabited. They may be new construction or renovated and adaptive-reuse projects. Winners will be featured in the May 2018 issue. The fee is US$75 per submission.

SUBMISSION DEADLINE: **FEBRUARY 1, 2018**

CALL FOR ENTRIES

Good Design Is Good Business

The editors of **ARCHITECTURAL RECORD** are currently accepting submissions for the **2018 ARCHITECTURAL RECORD GOOD DESIGN IS GOOD BUSINESS** awards program. Good design is a priority for leaders of business and industry looking to boost productivity, rebrand, and attract customers. The Good Design Is Good Business awards honor architects and clients who best utilize design to achieve such strategic objectives. Winners will be published in the June 2018 issue. The fee is US$150 per entry and $50 for each additional project.

SUBMISSION DEADLINE: **FEBRUARY 15, 2018**

CALL FOR ENTRIES

Design Vanguard

The magazine is looking for the best emerging architecture firms from around the world to feature in our **2018 DESIGN VANGUARD** issue. Although we do not have an age limit, we try to select architects and designers who have had their own practices for less than 10 years. In 2018, for the first time, winners will be featured in the June issue (instead of December). There is no fee to enter.

SUBMISSION DEADLINE: **FEBRUARY 15, 2018**

For full details and to submit your entry, visit: architecturalrecord.com/call4entries.
E-mail questions to arcallforentries@bnpmedia.com. Please indicate the contest name as the subject of your e-mail.

of unbuilt projects developed by architects including Robert Venturi and Denise Scott Brown, Rem Koolhaas, and Zaha Hadid. The Queens Museum exhibit was designed by Studio Christian Wassmann. For more information, visit queensmuseum.org.

Frau Architekt
Frankfurt
Through March 8, 2018
Presented by the German Federal Cultural Foundation, the exhibition features portraits consisting of personal stories and projects of 22 women who have influenced German architecture. At Deutsches Architekturmuseum. For more information, visit dam-online.de.

Making Room: Housing for a Changing America
Washington, D.C.
Through September 16, 2018
This exhibition explores how design solutions can address current housing issues through collaborations between architects, product designers, and suppliers. Installations feature various typologies, such as micro units, with a configurable 1,000-square-foot model home with movable walls and multifunctional furniture. At the National Building Museum. See nbm.org.

Lectures, Conferences, and Symposia

Architecture on Film: Rem Koolhaas
London
January 14, 2018
Hosted by the Architecture Foundation, two films of OMA founder Rem Koolhaas will be screened back-to-back at this event. The first is a feature-length interview with the architect from a 1985 segment by journalist Jef Cornelis; the second, completed decades later, is the documentary *REM*, which was made by Koolhaas's son. For more information, go to architecturefoundation.org.uk.

Women Architects and Politics in the Long 20th Century
Frankfurt
January 17–19, 2018
In conjunction with Deutsches Architekturmuseum's current exhibit on women architects, this two-day symposium (held in German) will examine how German women navigated their careers in architecture, how women who went abroad fared, and what role feminism has played in their lives. Details at dam-online.de.

Salon: Building and Bodies in Paris and London
London
January 19, 2018
A talk between U.S.-born Amy Lamé, the Night Czar of London (an official role), and Paris-based American writer Lauren Elkin on how gender and sexuality shape life in their respective European cities, the event will include a private visit to the *EY Exhibition: Impressionists in London*. At the Tate Britain. Visit tate.org.uk for information.

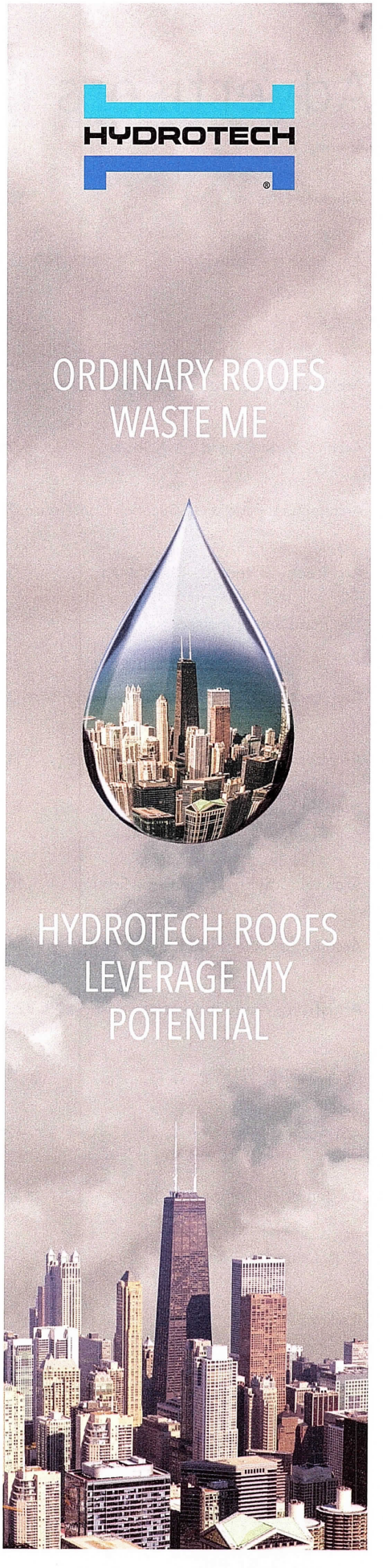
Competitions

Architecture at Zero
Registration deadline: January 10, 2018
Open to students and professionals, Pacific Gas and Electric Company's competition invites design proposals for San Francisco State University's estuary and ocean science center in Tiburon, California. Proposals should include a site plan for the 53-acre plot and designs for two buildings, the university's education facility and visitors' center, both of which must meet zero net energy performance requirements. Details at architectureatzero.com.

Wheelwright Prize
Deadline: January 14, 2018
This international competition run by the Harvard Graduate School of Design will award $100,000 to an emerging architect for a travel-based research project outside their home country along with an invitation to lecture at the GSD. Selected finalists must be available to present on March 5, 2018 to a jury in Cambridge, MA. Past jurors include Shohei Shigematsu, Preston Scott Cohen, and Farshid Moussavi. Visit wheelwrightprize.org for details.

Payette Sho-Ping Chin Memorial Academic Scholarship for Women
Deadline: January 17, 2018
Jointly offered by the AIA's Architects Foundation and Boston firm Payette Associates, in commemoration of their late principal Sho-Ping Chin, FAIA, an annual award of $10,000 will go to a U.S. woman in her third year of studying architecture as part of an accredited academic program. The recipient will also receive a year-long mentorship from the firm. More information at architectsfoundation.org.

GLI 2018: Executive Education for Museum Leaders
Deadline: January 24, 2018
The Getty Leadership Institute's annual program for senior-level museum executives within their first two to seven years in their role is accepting



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Advance Lifts Inc	151
American Hydrotech	147, 149, 151
ARCAT, Inc.	22
Architectural Record - CE Academy Contest	125
Architectural Record - AIA Show	74
Architectural Record - LEDucation Conference	73
Architectural Record - Record On The Road San Francisco	16
Architectural Record - Guess The Architect	32
Architectural Record - Academy of Digital Learning	119
Architectural Record - Digital Edition	106
Architectural Record - CE Center App	145
Armstrong World Industries	CV2, 1
AS Hanging Systems	42
ASI Accurate Partitions	29
Belden Brick Company, The	48
C. R. Laurence Co., Inc.	9
Ceilings Plus	4, 5
CENTRIA	CV4
Construction Specialties	131
Construction Specialties	141
CPI Daylighting Inc.	CV3
Doug Mockett & Company, Inc.	41
Dryvit Systems	17
Endicott Clay Products	11
Formica	27
Guardian Glass	135
Huntco Supply	24
Inpro Corporation	133
LaCantina Doors	8
Mitsubishi Electric	139
modular Arts	39
NanaWall Systems	129
National Terrazzo & Mosaic Association	25
Ornamental Metal Institute of New York	10
Petersen Aluminum	36
RH Tamlyn & Sons	12
RC Musson	26
ROCKWOOL	19, 21
SAFTIFIRST	7
Scranton Products	137
Seiho	56
Sherwin Williams	34
Skyscraper Museum	146
Smith System	55
Steel Institute Of New York	6
Think Wood	40
Tournesol Siteworks	15
Unilock	31
Viega	38
Vitro Architectural Glass (Formerly PPG Glass)	2, 3

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applications. Running for almost four decades, the program entails a month of intensive training and classes in Los Angeles institutions. Visit li.cgu.edu for more information.

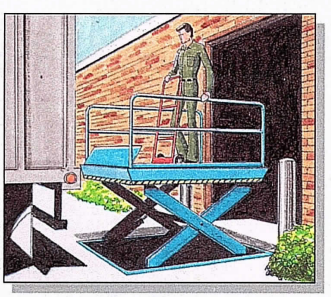
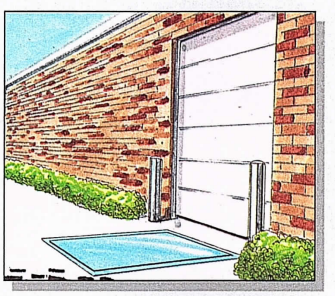
Arnold W. Brunner Grant
Deadline: February 1, 2018
The $15,000 grant is available to experienced U.S. architects who have earned a professional degree in the field (or one closely related) five or more years ago. The award funds investigations into contemporary architectural issues and requires recipients to create a final presentation documenting their work. More information at aiany.org.

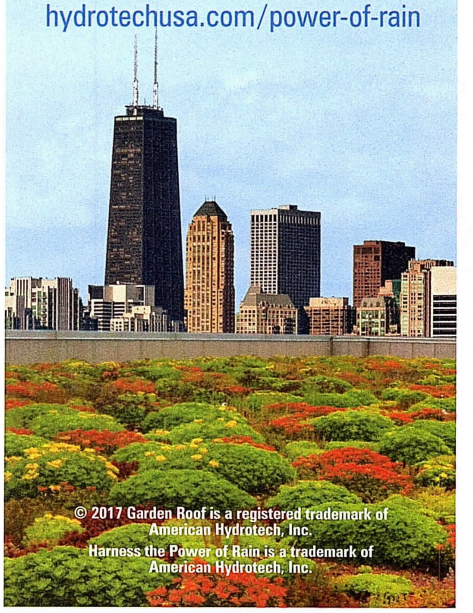
Place and Displacement 2018
Deadline: February 1, 2018
Run by Ideation Worldwide, a collaboration between students, architecture schools, and young professionals, this annual urban-design competition is seeking design proposals on how to integrate refugee populations within the cities of Amman, Berlin, and Nairobi. Proposal should include an operational plan, business plan, and a list of key institutional players and potential financial backers. Details at idevelopment.us.

COOK8
Deadline: February 8, 2018
This international competition run by *Domés International Review of Architecture* is looking for design proposals for an interior dining space that can seat eight people. The program must include space for food preparation, dining, and washroom facilities, with the goal of using design to facilitate social interaction. Three winning designs will be built at the Benaki Museum. Details at cook8.gr/en.

Antepavilion 2018
Deadline: February 28, 2018
The second edition of this annual pavilion asks designers to submit proposals for an installation atop a 62-foot barge, built in 1934, floating in Regent's Canal at Hoxton Docks. Commissioned by the Architecture Foundation and Shiva, the project aims to engage designers in construction processes. The winning team will work with AKT II engineers. More information at antepavilion.org.

E-mail information two months in advance to recordevents@bnpmedia.com.

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snapshot

PROJECT CHAOYANG PARK PLAZA
LOCATION BEIJING
ARCHITECT MAD ARCHITECTS

Ma Yansong, founder of MAD Architects, says the undulating, organic forms of his buildings are inspired by nature. As such, the design for Chaoyang Park Plaza—a 10-building complex near Beijing's central business district, anchored by two hulking skyscrapers—refers to traditional Chinese landscape paintings. The rippling, steel-reinforced concrete structures, clad in black-tinted glass, evoke the imaginary mountains of these well-known artworks, and contrast starkly with the surrounding boxy, beige towers. The 2 million-square-foot, LEED Gold–certified development, which comprises offices, commercial space, and residences, is arranged around a secluded public garden, or "valley," where, Ma says, "people can meet within nature, in the middle of the city." *Alex Klimoski*

